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# AIR CONDITIONING AND REFRIGERATION News

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## INSIDE DOPE

by GEORGE F. TAUBENECK



### *Story of the Week*

Leaping across the border from Soviet Russia into Finland, a hungry dog buried his nose in a garbage can.

"Wurruff!" he growled to a nosing-around cocker spaniel. "Not bad!"

Sniffed the Finnish canine:

"Are things so tough in Russia?"

"Oh, my no! Bones, and stuff. Not too much kicking around. A place for every dog, and every dog in his place."

"Then why did you escape over the border, if you had it pretty good in Russia?"

The Russian mongrel licked his chops, stretched his hind legs, sniffed the free air, and replied:

"Honestly, Chum, wouldn't you want to bark now and then?"

### *Fair Warning*

Housing is now said to be the nation's number one problem. The construction industry is in a hopeless logjam; and until this jam is broken up, economists doubt that capital goods production, upon which the maintenance of our boom depends, can be sustained.

The future of the air conditioning business lies, in good part, in a maintained high level of new construction. So, to a large extent, does the future of the appliance business.

It well behooves refrigeration and air conditioning executives, then, to study the construction industry, to become fully aware of the forces which have hamstrung it, and to take steps to avoid becoming further tangled in the same mess.

### *Labor Unions Plus Collusion Keep Building Costs High*

Questionable practices in the construction industry are said to come especially from two groups:

(1) Labor Unions, which have raised hourly rates out of sight and which have prevented new men from learning their trades.

(2) Suppliers and contractors, some of whom enter into collusive practices to keep prices high, to keep new methods and new materials out, and to prevent new companies from entering the field.

Already the air conditioning industry has had more than a taste of such artificial controls. In Chicago, for example, it is said that certain unions are powerful enough to dictate installation practices. Air conditioning distributors over there are even afraid to talk about the setup; they simply have to accept it and say nothing, if they want to do business, it would seem.

Everyone admits the need for a vast increase in the nation's construction activities, particularly in low-cost housing. It also is freely admitted that the principal obstacle in the way of this needed expansion is high prices.

It is further assumed that high prices result from high charges for union labor, outlandish restrictions on the use of that labor, and on high material prices. It is charged by some that high material prices result

*(Concluded on Page 4, Column 1)*

## The 'Brass Tacks' Approach To Home Freezer Selling

*(A guest editorial by A. M. Sweeney)*

ONCE upon a time—in the period when it was thought to be Un-American *not* to give an honest day's work for an honest day's pay—an old-fashioned household refrigerator retail salesman (who wasn't afraid of *work*, even to the extent of making calls at the homes of his good prospects, or even suspects, without "time and one-half for overtime") hit upon the idea that a household refrigerator would pay for itself by the savings accumulated from lower operating cost than the old ice box—and through savings from left-overs and quantity food purchases.

Thus, he added the notion of "economy" to his sales story; and thousands upon thousands of pre-war purchasers listened to him, and *believed* that a refrigerator would pay for itself.

Thousands of household refrigerators were sold in consequence; and they *did* pay for themselves, in terms of convenience, economy, safety, and protection of the family food and health.

Another energetic retail doorbell-ringing refrigerator salesman (apparently the race is now extinct) elaborated on this economy story, and sold the idea that all a family had to do was to buy three or four refrigerators—and then the "bread winner" could retire and the family could live on the savings made by their investment in these refrigerators.

More millions were sold, thereafter; and very few purchasers were critical of the slightly exaggerated story of economy told by the salesman.

But, it was only recently that a popular weekly publication printed an article about (and pictured) a New Jersey family which has actually applied this theory and practice to their present living with a "squad" of home freezers plus 12 cu. ft. of locker storage for the frozen food they raise and buy. They are virtually living on "the fat of the land."

The "bread winner" in this family of four hasn't as yet been able to retire on the cumulative savings resulting from the family's use of four

*(Continued on Page 20)*

## Westinghouse Plans No Appliance Price Boost

NEW YORK CITY — No increase in the prices of Westinghouse appliances is anticipated at present, J. H. Ashbaugh, vice president of the electrical appliance division, Westinghouse Electric Corp., declared last week, the *New York Times* reports.

Ashbaugh said that careful study of the effect of recently increased production costs showed no need for appliance price increases at this time.

## N.Y. Dealer Faces New Fair Trade Price Suit

NEW YORK CITY—The Monarch-Saphin Co., appliance dealership that was successfully enjoined by General Electric Co. a few months ago for cutting fair trade prices on its products, is back in court again to show cause why it shouldn't be enjoined from selling Philco products at below fair trade prices.

This second action was brought by Marino Jeantet, owner of WMPJ Sound Service Co. of Corona, L. I., who charged Monarch-Saphin with selling a Philco television set at below the fair trade price.

He said that a Philco model 1001 television set, fair traded at $423.24, including installation, service, and extras, was purchased from Monarch-Saphin on July 14 for $352.25.

Jeantet, who is also secretary of the Queens Electrical Appliance Merchants Association, indicated that this may be the first of several suits to be brought against alleged price-cutters in the city.

Jeantet charges Monarch-Saphin with persistent price cutting despite "requests and warnings addressed to the defendant to desist from said practices."

He said that this price-cutting is causing his customers to think that they can get Philco products at below the advertised, fair traded price and is causing other retailers to threaten to violate their fair trade contracts unless Monarch-Saphin is restrained from doing so.

He asserted that he has suffered a loss of sales as a result of Monarch-Saphin's actions and that he would continue to do so unless that dealer was restrained from price-cutting.

## August Home Freezer Sales Topped July

NEW YORK CITY—August sales of farm and home freezers, as reported to the National Electrical Manufacturers Association by 36 member companies, were up 10% over July.

Unit sales for the month numbered 49,538 of which 236 were sold outside this country. Four American-made freezers were sold in Canada in July, which was twice the number sold during the first six months of the year. Other foreign sales, however, dropped to less than one third those of June.

Sales for the first seven months totaled 282,951, of which 280,219 were made in this country.

Most popular size freezer was between 7 and 8.9-cu. ft. capacity, with 12,898 units sold in July. The 11 to 12.9-cu. ft. category was a very close second with 12,071 units sold. Sales in this category had increased about 50% over June.

Sales gains were reported for freezers ranging in size from 5 cu. ft. to 12.9 cu. ft. and from 17 to 20.9 cu. ft. All other sizes showed declines. Sales to foreign countries other than Canada were off sharply in all categories.

## Reg. W Applies If Credit Was OK'd After Deadline

WASHINGTON, D. C.—Where instalment sales of appliances were made just prior to the effective date of the new Regulation W on Sept. 20 and all details of the transaction were not completed until after that date, the date on which credit was actually extended will determine whether or not the regulation will apply, the Federal Reserve Board stated here last week.

Determination of the date of extension will depend on the circumstances of the particular case, the FRB declared.

For instance, it said, where all details of the transaction were completed before Sept. 20 except delivery of the appliance, the regulation would not apply. Here the extension

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## *D.C. Suburbs Are Restricting Use Of Cooling Water*

BALTIMORE—Drastic restrictions on the use of water for cooling air conditioning and refrigeration equipment were invoked last month by the Washington Suburban Sanitary Commission in a zone ranging from five to 10 miles wide along the Maryland-District of Columbia border.

The commission ruled that such water-cooled equipment shall not take from the mains or return to the sewers more than .08 gals. of water per minute per ton of refrigeration. All existing installations, it added, will have to be converted to comply before May 1, 1949.

Basis for the ruling is the commission's belief that the greatly increased number of air conditioning and refrigeration installations made in the area during the past two years were largely responsible for an unanticipated rise in water consumption and sewage disposal loads that had raised serious community problems.

The commission found that the

*(Concluded on Back Page, Column 2)*

## Program Is Set for Boston Meet Oct.8-10

BOSTON — Complete program for the First Eastern Refrigeration and Air Conditioning Educational Exhibit and Conference to be staged in the Bradford hotel here on Oct. 8-10, was released last week by John J. Madden, general chairman of the event.

The exhibit and conference is being sponsored jointly by the Refrigeration Equipment Manufacturers Association and the Refrigeration Service Engineers Society. The New England chapter of the latter group is host.

According to the program, exhibits will be displayed on all three days while five speakers will address the conference on Saturday and Sunday. "Information Please" sessions and educational briefs are scheduled for both Saturday and Sunday, with one educational briefs program Friday evening.

The affair will wind up Sunday afternoon with a RSES-REMA banquet and entertainment.

Three thousand refrigeration serv-

*(Concluded on Back Page, Column 1)*

## See Safety Code Revision Possible By End of Year

NEW YORK CITY—The proposed revision of the American Standard Safety Code for Mechanical Refrigeration (ASA B9) has just been placed before the sectional committee sponsored by the American Society of Refrigerating Engineers under the procedure of the American Standards Association, it has been announced by the American Standards Association, 70 E. 45th St. here.

The "B9 Safety Code," as it is generally called, is not a national law or regulation. It is a suggested and recommended safety code which only becomes effective when adopted by a state or municipality by ordinance or other legal action.

The code is not formulated by either the ASRE or the ASA. It is sponsored by the ASRE and approved by the ASA, with ASA setting up standard procedures.

Any organized group which has an inherent interest in the safety code may be represented on the sectional committee.

It is thought that the revised B9 code may get final approval by the end of the year.

## Frostair Duplex Unit Is Acquired By Deepfreeze

### *Smith Says Freezer Firm Is Planning Complete Household Line*

NORTH CHICAGO, Ill. — Deepfreeze Division of Motor Products Corp. here, manufacturer of home freezers, has acquired the Frostair duplex refrigerator from General Tire and Rubber Co., effective Oct. 1, it is announced by G. H. (Rock) Smith, Deepfreeze vice president and general manager.

Deepfreeze will offer existing Frostair distributors a continuing franchise on the Frostair refrigerator alone. In those territories not now covered by Frostair distributors, the franchise for the combination refrigerator-home freezer will immediately be open to Deepfreeze distributors.

Smith stated that the sale and distribution of the Frostair refrigerator will be under the direct supervision of F. F. Duggan, Deepfreeze general sales manager and advertising and sales promotion will be directed by R. V. Newbell, the company's advertising manager.

Smith stated that the Deepfreeze management is assuming the responsibility for the manufacture, sales, and service of Frostair refrigerators, and that it is immediately starting an intensive product development program on additional refrigeration models, as well as improved designs of the present Frostair model, so that Deepfreeze will offer its distributors a complete line of household refrigerators, combination refrigerators, and home freezers.

The Frostair refrigerator (originally called the "Frostor") was introduced as General Tire & Rubber Co.'s "postwar refrigerator" in late 1945, and drew considerable public attention because it split its interior space 50-50 between normal refrigerator area and a low temperature area for frozen foods.

The normal temperature section was in the top half of the storage section, and the low temperature section was in the form of drawers in the bottom half of the storage compartment.

## Committee Issues Rules To Regulate Credit Ads

NEW YORK CITY — A set of voluntary rules for making instalment loans or credit advertising statements conform to new federal credit regulations has been issued by the committee on instalment contracts of the Association of Better Business Bureaus.

The new code, reviving a successful wartime procedure, was approved by representatives of 17 national business groups following two days of committee sessions here.

Explaining that the rules are substantially similar to those drawn by the association for the same purpose under the wartime Regulation W, Kenneth Barnard, committee chairman, and Victor H. Nyborg, ABBB president, said that voluntary support then was virtually 100%, with similar adherence expected for the new rules.

Barnard pointed out that the new federal credit regulation, like its predecessor, does not control credit advertising. Proposals to add such controls to the wartime regulation, he said, were countered by the ABBB's action in achieving self-regulation.

Major provisions of the new rules, known as "Voluntary Standards for Advertising Consumer Credit," include the following:

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## Philco Corp. Sales Keep 30% Ahead of '47 Period During 'Slow' Summer

PHILADELPHIA — The summer quarter, seasonally the slowest for radio sales, may turn out to be quite something else for Philco Corp. Preliminary figures indicate the firm's business volume for the July-August-September period is already 30% ahead of the comparable 1947 quarter.

Biggest volume in its history occurred during the week ended Sept. 19 when Philco handled shipments that surpassed the $6 million mark. Added to other weekly totals, this should bring the quarterly all-product business volume for this period to something like $64 million, only slightly less than the $65,956,000 chalked up in the previous quarter. In 1947, third quarter volume, however, was only $49,248,000.

Predictions are that the refrigeration division too will achieve a record in 1948. Company officials forecast that $100 million in sales may be achieved before the year's end. This compares with $72 million worth of such sales concluded by Philco in 1947.

Plans are afoot to double the firm's production of television sets before January to keep pace with a steadily mounting dollar volume that is expected to outdistance Philco's radio business during the next quarter.

Not long after the present output of 4,000 sets per week has been pushed to an 8,000-unit figure, the manufacturer intends to drive it up to 10,000 weekly, a company statement said.

## Most Dealers Handle More Than 1 Line Of Ranges, IEEDA Survey Indicates

SPOKANE, Wash.—Very few dealers in the Inland Empire area handle more than two brands of any one appliance and a large percentage carry only one brand, a recent poll among the members of the Inland Empire Electrical Dealers Association, has revealed.

Every dealer handles refrigerators, ranges, and conventional washers, the poll indicated. A few do not carry ironers, freezers, or radios, while about a quarter of them do not carry automatic washers, dishwashers or kitchen cabinets.

Percentage of dealers carrying each number of brands are:

* * *

| | None | 1 | 2 | 3 | 4 | 5 | 6 | Average No. Per Store |
|---|---|---|---|---|---|---|---|---|
| Ranges | ..... | 23% | 55% | 12% | 8% | 2% | ..... | 2.1 brands |
| Refrigerators | ..... | 45% | 45% | 5% | 5% | ..... | ..... | 1.7 brands |
| Automatic Washers | 23% | 65% | 10% | 2% | ..... | ..... | ..... | 0.9 brands |
| Conventional Washers | ..... | 38% | 45% | 12% | 5% | ..... | ..... | 1.9 brands |
| Ironers | 5% | 38% | 47% | 8% | 2% | ..... | ..... | 1.7 brands |
| Kitchen Cabinets | 25% | 53% | 22% | ..... | ..... | ..... | ..... | 1.0 brands |
| Dishwashers | 27% | 65% | 8% | ..... | ..... | ..... | ..... | 0.8 brands |
| Freezers | 5% | 48% | 33% | 10% | 2% | 2% | ..... | 1.7 brands |
| Radios | 10% | 33% | 33% | 17% | 5% | ..... | 2% | 1.9 brands |

## Salesmen's Group Hits Tendency To Return to Straight Commission Pay

NEW YORK CITY—"With business getting tighter, the old abuses of the straight commission system are again being reported," declared Louis A. Capaldo, president of the National Council of Salesmen's Organizations, in a statement advocating adoption of legislative measures protecting the salesman's interests.

"Too many younger salesmen are taking straight commission jobs with little known or poorly established companies, only to find themselves with little or no earnings to show for their efforts.

"This could not happen to the great mass of employes covered by the federal wage and hour law, for they have the protection of a floor to their earnings—a minimum wage. But the traveling salesman has been expressly exempted from that law.

"There may be good reason to exempt this class of salesman from the overtime provisions of the law, but why should he be discriminated against in the matter of a minimum wage? He needs this protection; and for that matter so does industry, because it protects the fair employer against unfair competition.

Calling upon wholesale salesmen to work with the council for their own protection and security, Capaldo pointed out that the 1948-49 program drafted by its legislative committee, headed by Louis A. Metz, advocates:

1—Amending the Social Security Act to cover many salesmen now omitted.

2—Liberalizing the Federal income tax deductions to cover a greater share of salesmen's business expenses.

3—Amending state and Federal laws to assure salesmen their legal expenses in suits to recover commissions or wages.

4—Promoting arbitration for salesmen disputes and establishing a National Salesmen's Arbitration Panel to serve without charge.

5—Establishing a legal advisory bureau to give free advice to salesmen concerning their legal rights and obligations.

6—Enacting legislation to establish minimum compensation percentages for straight commission salesmen and to clarify court decisions pertaining to advance payment against commission.

## Factory Cleaner Sales Drop Off

CLEVELAND — Factory sales of standard-size household vacuum cleaners for August dropped off 13.5% compared with the same month of last year, according to the Vacuum Cleaner Manufacturers Association. Unit sales totaled 237,194 for the month.

## Peterson Is Westinghouse Refrigeration Ad Manager

MANSFIELD, Ohio — Wilbur C. Peterson has been named supervisor of refrigeration advertising for the Westinghouse Electric Appliance Division.

**W. C. Peterson**

Peterson had been a newspaper man for 21 years. Recently he was managing editor of the Mansfield *News-Journal*.

As supervisor of refrigeration advertising, Peterson will work with the Fuller & Smith & Ross advertising agency in preparation of all advertising and related materials for the Westinghouse line of household refrigerators.

## Freezer Dealer Seeks Sales from Users of Big Refrigerators

WILMINGTON, Del. — A simple promotional idea which has resulted in many extra sales of home freezers for the major appliance division of Wilmington Auto Sales Co. here, has been that of concentrating home freezer calls on customers who have already purchased large-size refrigerators.

Under the plan, a list has been made up of Wilmington customers who have purchased home refrigerators of any brand, of 9-cu. ft. capacity or better.

"Such purchases invariably indicate a large family, or a wealthy homeowner who enjoys having plenty of refrigerative capacity on hand," Al Chance of the management, indicated. "Often, where the customer has purchased a 10 or 12-cu. ft. box, the chances are he will benefit greatly by the use of a home freezer, but doesn't know it."

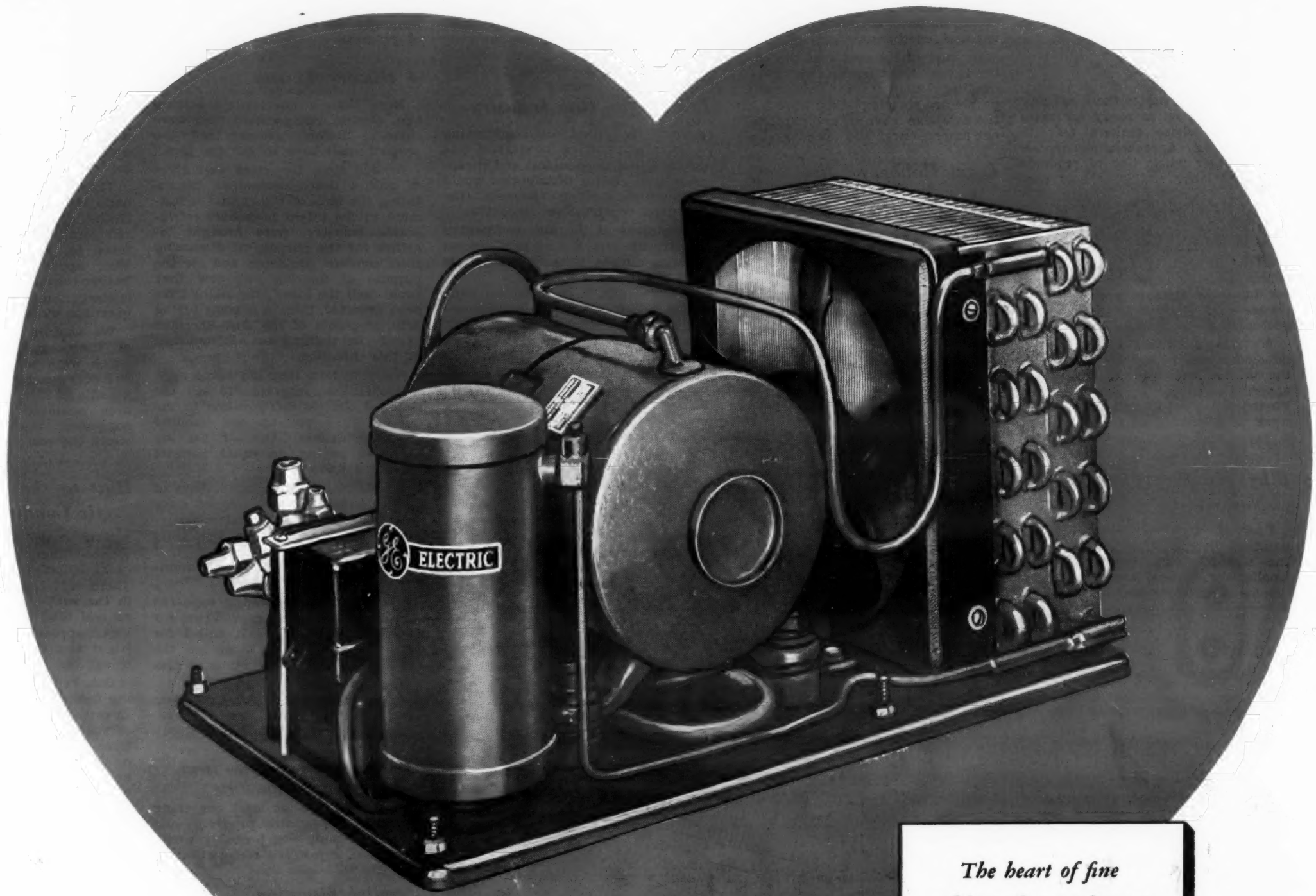
## Duncan Promoted to Works Mgr. At Crosley Richmond Plant

CINCINNATI — Promotion of R. W. Duncan to the position of works manager of the Crosley refrigerator plant at Richmond, Ind., has been announced here recently by J. W. Craig, Crosley general manager and vice president of Avco Mfg. Corp.

For the past several months, Duncan has been assistant works manager, and since 1945 was chief process engineer.

Duncan joined the Crosley organization in Cincinnati in November, 1941, where he did engineering work on the Mark 14 Gun Sight under the direction of Craig.

# FOR *BETTER* REFRIGERATION




*The heart of fine refrigerating equipment*

## THE ALL-NEW GE SEALED CONDENSING UNIT

Just out—thirty-two General Electric sealed condensing unit models, tailored to fit almost every cabinet requirement. These completely new hermetics are a climax of thirty-seven years of General Electric experience in sealed condensing unit refrigeration.

Ask for the new G-E sealed units in your refrigerated cabinet. They'll mean greater dependability, top economy, trustworthy service. When the "heart" of your refrigerated cabinet is a G-E sealed unit, you *know* it's designed, built, tested, and warranted by *one* manufacturer . . . to give years of satisfactory service.

### "MAKE MINE G. E."

General Electric is a household word for quality performance. You'll find fewer complaints, fewer service problems, and more over-all satisfaction with cabinets equipped with these compact new units. Built in sizes from ⅙ to ½ hp, they're designed to give *more refrigeration per kilowatt hour of electricity.* General Electric's national replacement policy will make servicing quick and easy. The G-E line covers the entire suction range down to −30° F.

### DON'T SETTLE FOR LESS

With advantages like these, it pays to *investigate* these new sealed units . . . *check* their G-E points of superiority . . . then *insist* on them in every refrigerated cabinet you buy. *General Electric Company, Air Conditioning Department, Section R87010S, Bloomfield, N. J.*

## GENERAL ELECTRIC

***Better Refrigeration***

NOTE: G-E sealed units are sold exclusively to manufacturers of refrigerated cabinets.

# INSIDE DOPE

by GEORGE F. TAUBENECK

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from collusion on the part of contractors and dealers.

## *Bad Policy*

In the United States there are new construction devices ready for mass production whose makers fear to market them, apprehending opposition to their whole line of products by union labor and in-cahoots contractors.

That's a helluva note. So is this:

We find a refusal on the part of A. F. of L. labor union members to plaster the walls of small homes unless the ceilings are also plastered, for instance, thus imposing on the Owner and Builder additional, unnecessary costs.

We also find a limited number of building workers available because the unions refuse to admit enough apprentices to the organized trades. Furthermore, a limited amount of work is permitted in the course of a day's work by these unions.

## *Why We Pay Through the Nose*

Prohibition of the paint sprayer by painters' unions and restriction of the size of paint brushes to the smaller dimensions, are further examples of artificially-maintained high costs in the construction industry.

And again: Manufacturers who satisfy all requirements of one labor organization often are unable to deliver their manufactured articles to building operations controlled by an opposition labor group.

These few instances indicate why inflexible labor costs and rackets, and combinations in restraint of trade among material suppliers, keep building cost exorbitant.

In spite of the fact that the country is now short more than 3,800,000 dwelling units, the construction people are starving—they have taken the available business and parceled it out among fewer and fewer people.

## *Legal Robbery*

How do these construction rackets operate? The technique is simple. The retailer who will not join the "cartel" cannot buy from established manufacturers. The manufacturers who will not comply with this practice are boycotted. And the non-cooperating builder can't hire union labor.

In many places and in many trades —though not everywhere—contractors, union officials, manufacturers, and sub-contractors are united under municipal codes, some of them holding over from the old NRA days. The object of most of these collusions is to control the prices of jobs.

Here's how this sort of collusion works: Sub-contractors are supposed to bid on jobs offered to them, with the award going to the lowest bidder. But in such instances the sub-contractors send their bids, not to the contractor, but to the office of the "authority" or to the association secretary. There the proper officials decide who should get the job "in turn"—then the bids are fixed up to make that person the lowest bidder. Thus he gets the job and an extravagant price for doing it.

Collusive agreements have been discovered between sub-contractors, labor leaders, and materials men. Thus it becomes apparent that high costs in construction can't be blamed entirely on the unions. In fact, there is much evidence to support the view that some businessmen have used the unions to abet price-fixing practices.

## *Lesson for Our Industry*

When the infant air conditioning industry was getting its start, it was assumed that the simplest and cheapest way of getting distribution would be through existing channels (the organized construction "racket").

Executives of the air conditioning industry are now finding that instead of being simple, such distribution is complex, and confused; and instead of being cheap, it is organized from top to bottom with the idea of keeping prices as high as possible.

What's more, "existing channels" control the business at the outlet end so effectively that manufacturers and suppliers often must deal with them on their own terms, and sit back helplessly while artificially maintained price levels prevent volume from rising.

Anyone who looks at the A. F. of L. building trade unions can see that air conditioning should want no part of this mess. At whatever cost, the air conditioning industry should maintain its own standards, its own prices, its own personnel, and its own development. Hook-ups with certain unions and with their colluders keep volume low by keeping costs high, and choke off satisfactory factory production.

By working more and more through independent businessmen—specialized air conditioning dealers—and by putting more and more installation into the product, the air conditioning industry can steer clear of the construction industry's logjam, and can keep open for the future the channels of progress.

## *A History Lesson*

More than a quarter-of-a-century ago, electric refrigeration men were saying: "Before we can sell the product we'll have to sell the idea."

In due time the chief executives of half a dozen companies, constituting the bulk of the capital investment in the infant household refrigerator industry, were brought together for the purpose of discussing their common problems, and for the purpose of figuring out how they could "sell the idea." As might have been expected, there was some toying with proposals of the Anti-Sherman variety, but nothing was accomplished in this direction.

Early in 1926 they did agree upon a cooperative program "to sell the idea" of electric refrigeration to the public. They put up one hundred thousand dollars, each of the six members paying an equal portion, namely $16,666.66.

Considering the several millions of dollars which have been spent since that time to advertise electric refrigeration—and considering the truly magnificent results thereof—that original cooperative effort now seems somewhat puny.

At that time, however, it appeared to be a rather lavish expenditure for educational purposes. It called for some broad-gauge thinking on the part of several top executives to toss that much money into a pot.

Did that original $100,000 program really "sell the idea" of electric refrigeration to the public?

Certainly not.

Did it even help sell the idea?

Well, maybe a little.

But there was at least one thing accomplished by this program—and that one result was probably worth the price: *it fostered cooperation.*

## *Parallel Situation*

We bring up this bit of history because we believe that a parallel situation exists in the air conditioning industry today. Furthermore, we believe that it offers a valuable suggestion to this budding industry.

Before a cooperative program to sell the idea of electric refrigeration to the public could be consummated, it was necessary to appoint a series of committees to supervise the job.

For example: The advertising managers of the member companies, together with their advertising agency account executives, comprised the committee which worked out the details of the cooperative advertising campaign.

This committee went at its job with no less enthusiasm and seriousness than did the framers of the Constitution of the United States. Days and nights were spent in arguing the psychology of the housewife, the technique of copy, the merits of media. And all this niff-nawing was no fruitless argument, because the net result was an agreement regarding many of the major premises upon which all subsequent electric refrigeration advertising has been based.

Specifically, there was an agreement upon many items of terminology —words that were good and words that were bad, and words which the housewife and the public generally could understand.

And there were important agreements in regard to policy—a definition of points which were constructive, and arguments which were destructive to the best interests of the industry as a whole from a long-range viewpoint.

For example: they decided to call it *electric refrigeration,* rather than any of the half-dozen other names which were suggested. They discarded the term "boiler" (a word commonly used up to that time to designate the evaporator) and agreed upon "cooling unit" as a simpler and more understandable term.

They voted to "lay off" the ice man and his dirty feet—the popular theme of all beginners in electric refrigeration advertising. They listened to, examined, and rated the basic appeals: pride of possession, health, convenience, etc. In a similar manner, numerous other fundamental questions were debated to a decision.

We venture a guess that if none of the cooperative advertisements which were born out of this travail had ever reached the public, the real benefits of this enterprise would have been achieved and, as previously suggested, would have been well worth the cost.

## *Hint to the Air Conditioning Industry*

Now consider the parallel with air conditioning. Here we have a new industry of great promise. There is tremendous public interest in the subject. Apparently there is no real need to "sell the idea." The idea, apparently, is already sold. Right now the real job seems to be to sell the product.

But, here's the rub: air conditioning today is a confusion of ideas, of theories, of terms. There is a Babel of voices—forces pulling in all directions—a lack of agreement on plan or purpose. What to call it, how to explain it, what appeals should be emphasized, how to install it, how should it work, what should it do for the buyer?

An agreement upon the best answers to such questions would give all sales promotion managers of air conditioning firms a sense of direction, a singleness of purpose, and a continuity of educational effect.

Air conditioning needs *direction!*

If *direction* would pay off as it did for electric refrigeration, who would complain?

## *Immediate Target*

In the case of the early electric refrigeration promotional programs, the advertising men had an assignment from their top executives. They had been entrusted with a sizeable fund, and were conscious of their responsibility to spend it wisely in the interests of all. Thus they had a definite objective, and were under pressure to see the job through to a successful conclusion. So they did it, and well.

Obviously, the kind of men who can do this sort of job for a whole industry can be brought together to acquire the necessary inspiration only when they are inspired by a worthwhile objective.

Given a half million dollars to spend cooperatively, it is entirely possible that the amalgamated promotion minds of the air conditioning industry could lock up the job in short order.

# Echo of Retail-Mindedness

If you could listen to the talk over the teacups . . . you'd hear what Kelvinator engineering progressiveness means to the minds of women, America over. It's as simple as this woman's words: "I never dreamed a range could be as practical and as beautiful . . . it's exactly what I've always wanted."

This word-of-mouth advertising is one of the priceless assets of the Kelvinator dealer. And it was planned for in this pledge of the Kelvinator Franchise: "*When Kelvinator heralds a new line, the unusual may rightly be anticipated . . . revelations in styling . . . advanced utility . . . practical usefulness in the home.*"

The fulfilment of Kelvinator's policy is evident again and again in the magnificent new electric ranges . . . the revolutionary "Top-to-Bottom" refrigerators and the remarkable home freezer. The widespread consumer acceptance of these great new products . . . the Echo of Retail-Mindedness . . . is a powerful sales tool for every Kelvinator retailer.

TUNE YOUR RADIO TO EDWIN C. HILL, and "THE HUMAN SIDE OF THE NEWS", Monday through Friday . . . another retail-minded contribution to the progress of Kelvinator Dealers.

**Kelvinator — of Course!**

**. . . THE MOST VALUABLE FRANCHISE IN THE APPLIANCE INDUSTRY**

KELVINATOR, DIVISION OF NASH-KELVINATOR CORPORATION, DETROIT, MICHIGAN

## Frozen Food Case Has Another Function


**A food merchant in a truck farm area which serves the Buffalo territory found he had to pull all the stops to move frozen foods. Among his various plans to "hit the customers right in the eye" with the frozen food idea was to put his frozen food cabinet right up at the front of the store where it could be seen by the passing traffic.**

* * *

## Nashville Sales for August over July

NASHVILLE, Tenn.—August sales of both electric ranges and refrigerators by local dealers were 10% above July, according to a report issued by the Nashville Electric Service. Sales of home freezers, however, were down 10%, while water heater sales dropped 15%.

Total unit sales for August, reported by 78 dealers, were: refrigerators 912, ranges 641, water heaters 351, and home freezers 33.

## More Ft. Wayne Stores Staying Open Nights

FORT WAYNE, Ind.—A&Y Appliance Co. here, has joined the ranks of many of the larger Indiana household appliance stores which have adopted permanent evening sales hours.

A&Y will be open Monday through Friday until 9 p.m. on a permanent basis.

# Equipment Makers List Factors Which May Tighten or Loosen Steel Supply

NEW YORK CITY—A program to meet any of three eventualities that might occur within the next 60 days and which would affect their supplies of steel was established here recently by a group of large equipment manufacturers, the *New York Times* has reported.

Though no inkling of what the program consisted was made known, the eventualities expected were these:

1. Full allocation of ferrous metals might be suddenly introduced.
2. Sudden war production might be demanded of them.
3. An easing of supplies from overstocked consumer goods manufacturers' inventories might develop due to cut backs caused by entry into a buyers' market.

The current scarcity of metals at the producing level and the cutting of some supply quotas for the first quarter of 1949 by steel mills were pointed to by purchasing executives of these manufacturers as indications that allocations might come at any time.

In addition, Economic Cooperation Administration (European aid) and military orders for steel have been increased substantially above existing appropriations, further tightening the domestic supply, they noted.

The purchasing executives have also confessed hearing reports that large orders are being placed with plants here direct from Washington, D. C. without going through normal procurement channels.

On the other hand, they are leary of the big inventories existing in consumer goods industries. They fear that an economic setback may occur if these overstocked firms suddenly decide to unload their excess inventories in order to take advantage of tax benefits during the fourth quarter.

## Display Technique Is Vital To Frozen Food Sales In Garden Area

EAST AURORA, N. Y. — Selling frozen foods in a rural community which is noted for its excellent truck garden produce presents something of a problem.

But A. W. Reader, proprietor of Reader's Groceries on Main St. here, has made a real success of his frozen food business by making the most of display possibilities.

"People in this community don't think much about frozen foods unless you hit 'em right in the eye with a display," said Reader. That's why he puts his frozen food cabinet right up in the front of the store so it can be seen readily and easily by sidewalk and street traffic.

The 22-cu. ft. case, featuring "Frozen Foods" in large letters, hits the eye of everyone coming into the store, or merely passing by. "We have made our customers frozen food conscious by putting this case in the front of the store," said Reader. "They can't help but see it and when they come in they automatically take a look in the case."

## Bass Buys Dacey Co. Property In Biloxi

BILOXI, Miss.—The Dacey Equipment & Supply Co., 916 West Howard Ave., has been purchased by Bill Bass, from Gordon A. Dacey, who has been the Norge dealer at Biloxi since December, 1945. The business will be moved into a building on Main St., and the firm will continue as the Norge dealer for Biloxi.

## Defy Superstition; Open 13th Store

ALBANY, N. Y.—Breslaw Brothers, operators of a chain of furniture and appliance stores, opened their thirteenth unit recently at 44-55 Pearl St.

James S. Miller is store manager. One of the largest in the Breslaw chain, the new store has a main floor with 8,000 sq. ft. of selling space.

## Bell Aircraft Co. Buys Valve & Fittings Firm

BUFFALO — The Bell Aircraft Corp. has purchased the capital stock of the W. J. Schoenberger Co., Cleveland manufacturer of valves and fittings used by the gas appliance and air conditioning industries.

This was announced simultaneously by President Lawrence D. Bell of Bell and President W. J. Schoenberger of the Cleveland company. The purchase price was not disclosed.

The Cleveland company will continue in business without change in personnel, management, or nature of its work and will be operated as a wholly-owned subsidiary of Bell. Financial sources said Schoenberger's sales approximate $5,000,000 yearly.

Acquisition of the Cleveland company, Bell said, is in line with Bell Aircraft's development of products for commercial markets outside the aircraft field. Early this year, Bell put on display its prime mover, a ½-ton power wheelbarrow.

## Farm Electrification Conference Nov. 17-18 Programs Dealer Panel

CHICAGO—Clifford Simpson, managing director of the National Electrical Retailers Association, has been named to head a panel discussion on how dealers should meet the electrical needs of farm families at the forthcoming National Farm Electrification Conference.

The conference will be held at the Congress hotel here from Nov. 17 to 19. Its aim is to increase the use of electricity on the farm.

Twenty-three associations and groups, including NERA, are sponsoring the gathering, which is expected to attract power suppliers, home economics groups, manufacturers, distributors, retail dealers, and the farm press and radio.

Successful methods of merchandising appliances and electrical equipment to the farmer will be discussed.

**'Job for a Truck Driver'**

## *Wright Says NARC Demonstration To Labor Union Brought About 'Domestic Service' Classification*

DETROIT—How the National Association of Refrigeration Contractors helped bring about a new service employe classification in a Chicago union labor contract that will save contractors money was described here recently by Ed S. Wright, president of NARC.

Speaking at the first fall meeting of the Refrigeration Contractors Association of Detroit, Wright said that the new "domestic employe" classification permits a lower pay rate for servicemen who replace hermetic units.

To get this classification, Wright asserted, NARC members gathered union officials in a room and removed and replaced a hermetic unit right before their eyes. That, they pointed out, is a truck driver's job—not a journeyman mechanic's. The union officials agreed and the new classification was drawn up.

Wright claimed that one Chicago contractor said that this clause alone would save him more than $1,000 per year.

In his talk, Wright outlined what the NARC has accomplished for the individual refrigeration contractor and what it can do for him.

"Two years ago," he stated, "we couldn't point to anything definite to show a contractor that he would be better off in our association than out of it. Today we can.

"For one thing, we can write a better labor contract for him than he can get for himself."

He declared that NARC, in its few years' existence, has won recognition for the contractor in the fields of manufacturer and wholesaler relations, of fair trade practices, and of safety and licensing codes, as well as labor relations.

Wright complimented the Detroit group on the city's refrigeration safety and licensing code which he termed a model for the rest of the country. However, he said, this good action has brought about a reaction elsewhere.

In attempting to get licensing codes adopted in other towns where labor is strongly unionized, the unions battle these codes. They will agree to support licensing only if the local industry is thoroughly organized, he noted.

Wright also told the Detroit group that he considered it their "duty" to work for a state-wide code.

In discussing the NARC's improved standing with manufacturers, he gives credit to the association for working a change in the attitude of a large refrigerant firm from one of strict non-cooperation to one of friendly cooperation.

He pointed out how the organization has assisted individual contractors to straighten out their problems with certain manufacturers by bringing the association's interest in the case to proper officials in the manufacturing firm.

A NARC committee, he said, is working on a model warranty and guarantee. The association's work along this line has already been influential in getting one manufacturer to change his warranty setup, he asserted.

The association is working, too, on establishing a set of fair trade practices for the industry. He noted that the only element in the industry that is governed by fair trade practices are the refrigerant manufacturers.

He said that men from the U. S. Department of Justice were only recently checking over the association's file of complaints against unfair practices.

During the business portion of the Detroit group's meeting, the contractors elected four new men to the board of directors for three-year terms.

The newly-elected directors are Michael G. Maksym of M & S Refrigeration Engineers, William Mercier of Mercier & Spaulding, Inc., Ernest B. Downer of Grand River Refrigeration Co., and Alvin G. Weber of Weber Refrigeration Co.

Retiring directors are Chris Milazzo of Milazzo Refrigeration, Ben G. Hyatt of Copeland Authorized Refrigeration Service, Jack P. Lindsay of Ace Refrigeration Service, and George B. Johnston of Johnston Refrigeration Construction.

Hyatt, as retiring president, remains as an ex-officio member of the board.

The new board of directors meets soon to elect the association's officers.

# Installation with 96 Continuous Feet of Refrigerated Display Features Unusual 'Automatic Fog' System of Humidity Control

SEATTLE, Wash.—More than 40% of the merchandise sold in Cushing's Food Center here comes out of the 96 continuous feet of self-service refrigerated display equipment found in the store, according to Glenn Cushing, owner and operator.

With only 5,400 sq. ft. of selling area in his new store, Cushing reported sales of $78,000 recorded in the first month of operation. Cushing expects the Food Center to gross more than $1,000,000 in its first year of operation.

Sherman W. Bushnell, Jr. of Refrigeration Engineering Co. of Seattle, which designed, engineered, and installed the equipment, pointed to three unusual features of the installation.

These are:

1. An automatic chilled humidifying system combined with forced convection cooling in the self-service refrigerated produce display cabinets. This "automatic fog" system is claimed to maintain fruits and vegetables in perfect condition three to five times as long as has been possible heretofore.

2. A new style dairy case that maintains delicatessen and dairy products in an open self-service case under perfect temperature conditions by utilizing a forced-convection system instead of the customary gravity coils.

3. All refrigeration combined in a single line of cases that stretches for 96 ft. down the store and provides one shopping cycle for vegetable, fruit, delicatessen, dairy and frozen foods. All cases are exactly alike in external design and dimension and joined with a continuous illuminated canopy.


**Above is a portion of the produce section at Cushing's Food Center in Seattle. An unusual automatic chilled fog system furnishes humidity control. The owner credits this system with maintaining fruits and vegetables in perfect condition three to five times longer than has been possible in the past.**


**The dairy and delicatessen section above utilizes a forced convection system instead of the conventional gravity coils to maintain "perfect" temperature conditions. This is part of the 96 continuous feet of refrigerated self-serve cases in the newly opened store.**

"The outstanding feature," Bushnell stated, "is the automatic fog system, that protects the fruits and vegetables under any desired humidity condition. The 20-HW York condensing unit not only operates the blower-type evaporator in the case but also operates a built-in water cooler which provides the chilled fog.

"This fog is released in the refrigerated air stream once approximately every seven minutes through atomizing injectors spaced at regular intervals. The entire operation is controlled by a clock mechanism which can be adjusted to regulate the amount of fog required.

"Provision is made for elimination of the fog altogether for certain types of products such as melons, packaged vegetables, etc., that do not require humidity control."

In Cushing's Food Center three Model 20-HW's (York) are used, one for the fruit and vegetable case, one for the dairy case, and one for the frozen food case.

All condensing units are remotely installed at the rear of the store to provide freedom of access by servicemen and also to eliminate any possibility of noise or vibration in the shopping area.

The "Pre Kool" cases are of all metal construction with all outside exposed surfaces of highly polished monel. They are 46 in. wide and stand 6 ft. high, the large mirror accentuating their size and adding to the massiveness of the displays.

G-E slimline lighting behind personalized colored plastic lettering provides the grocer with a means of identifying each case, emphasizing to his customers the importance attached to proper preservation of foods by refrigeration.

The Cushing Food Center is one of the first installations of Pre Kool self-service cases, which are manufactured by Pre Kool, Inc., of Spokane, Wash. Bushnell reports that "we have been able under actual operating conditions to maintain such perishable products as lettuce, cauliflower, and broccoli for longer than three weeks in the Pre Kool vegetable case."

The refrigerated self-service cases have completely taken over the wall space ordinarily used for conventional wall shelving for staple groceries. One purpose of this, Cushing explained, is to ensure a flow of traffic past all displays of higher mark-up items.

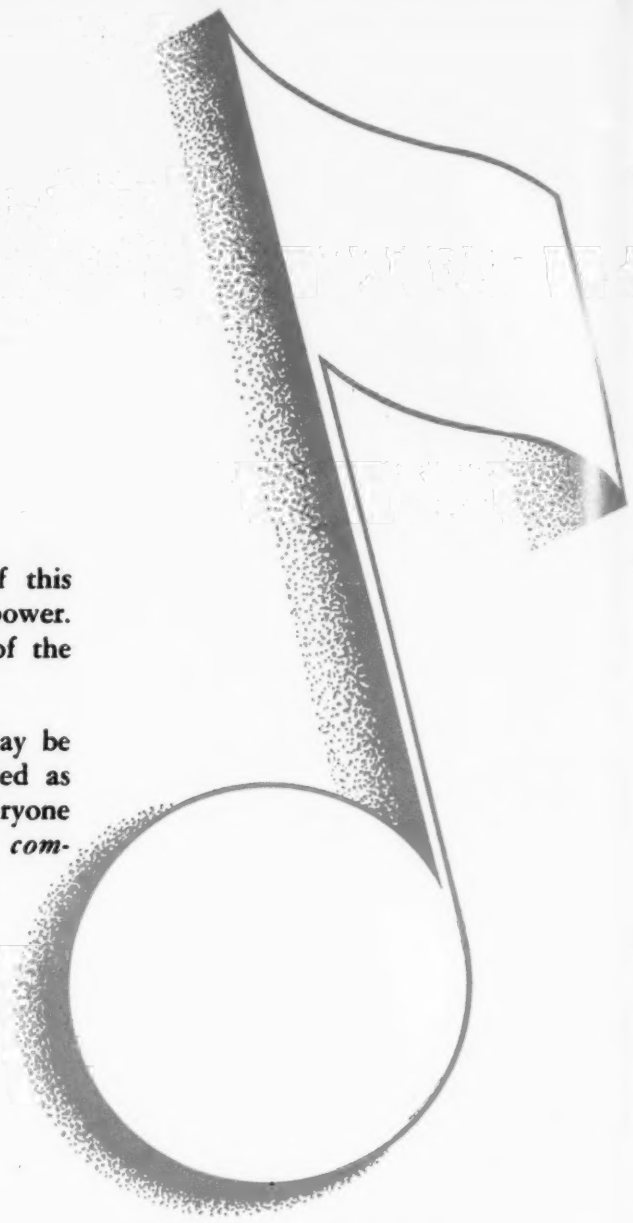
Spacing of bakery goods, meats, produce, and dairy products was planned to draw traffic past all wall displays.

The store was also laid out so that traffic would flow in a clockwise direction only, an arrangement which contributes to maximum efficiency.

Staple grocery items are all carried on four long display islands and two shorter ones, and customers naturally go in after these. The result is that there is not a single "dead spot" in the entire store, Cushing says.

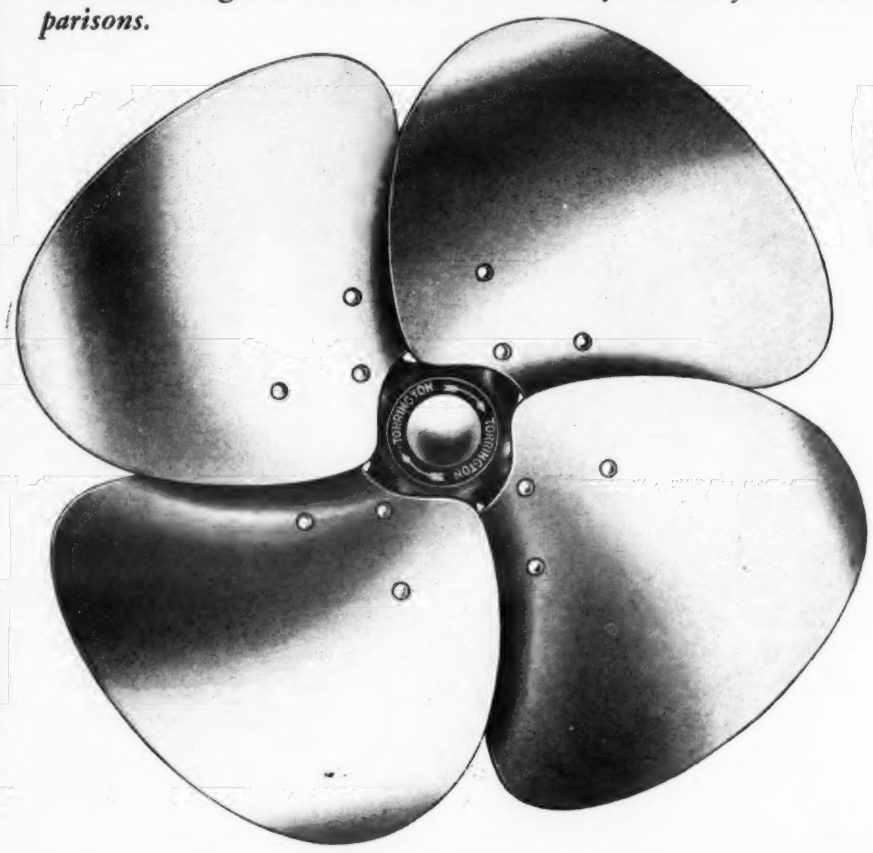
# HI-*Eff*

## AIRISTOCRAT



Outstandingly HIgh *Eff*iciency is the chief characteristic of this truly *new* fan blade. It *delivers more air* for any given horsepower. Size for size it looks bigger, more powerful. In every sense of the word, HI-*Eff* is more fan blade for your money.

Convincing proof of the superiority of this new fan blade may be found in the NEMA and NAFM performance tables prepared as a guide to selection. We shall mail a copy of these tables to everyone on our mailing list within the next few days. *Make your own comparisons.*




### SPECIFICATIONS

Three-blade models in 10″ to 20″ diameters; four-blade models 8″ to 20″. Choice of *five* pitches in most sizes. Aluminum blades, steel spider and hub. Standard finishes. Samples available now, production quantities December 1.

*The* **TORRINGTON**
**MANUFACTURING COMPANY**
TORRINGTON, CONNECTICUT

**Another**

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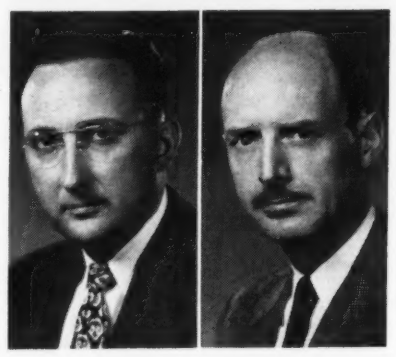
## In Engineering Posts



Wm. Reeves H. F. Goetz

• • •

## Goetz and Reeves Take Fedders-Quigan Positions

BUFFALO—Appointment of Henry F. Goetz as sales engineer and Williams W. Reeves as applications engineer is announced by A. J. De Fino, manager of the Condenser Division of the Fedders-Quigan Corp.

Goetz is a mechanical engineer with wide experience in manufacturing practice.

Reeves has been in the Fedders-Quigan Corp. for approximately two years and received basic training as a design engineer.

## Schultz Opens Second Store

ERIE, Pa.—The Arthur F. Schultz Co. has opened its second appliance store here at State and 14th Sts. It operates another large appliance outlet at 212 East 18th St. Arthur F. Schultz is president of the company.

## Washers, Dryers, Ranges, Top Sales In Chattanooga

CHATTANOOGA, Tenn. — Clothes washers and driers and electric ranges scored outstanding sales gains here during August, the Electrical Power Board of Chattanooga reported recently.

Sales of refrigerators, home freezers, water heaters, ironers, and vacuum cleaners all fell below July.

In the commercial refrigeration field, only freezing cabinets showed any gain over July.

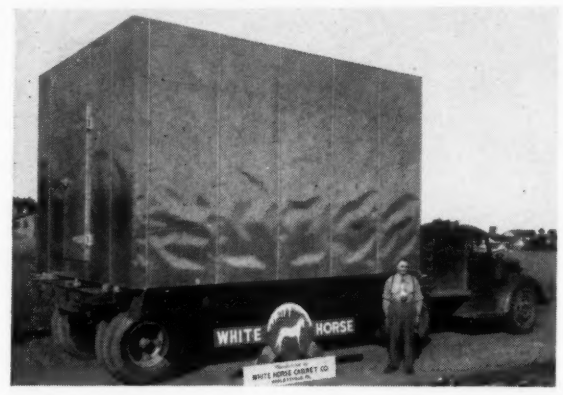
Clothes driers were 88% ahead of July, clothes washers 67%, and electric ranges 30%.

Ironer sales dropped 7%, refrigerators 9%, vacuum cleaners 27%, water heaters 38%, and home freezers 47%.

Unit sales of each appliance by local dealers, with average unit price and total sales value were as follows:

| Appliance | No. of Units | Average Unit Price | Total Sales Value |
|---|---|---|---|
| Refrigerators, domestic | 653 | $ 278.40 | $181,795.34 |
| Home Freezers | 39 | 324.16 | 12,642.20 |
| Ranges | 778 | 254.43 | 197,946.11 |
| Water Heaters | 275 | 124.36 | 34,200.07 |
| Ironers | 36 | 174.40 | 6,278.55 |
| Vacuum Cleaners | 696 | 70.14 | 48,818.60 |
| Clothes Washers | 1,036 | 169.91 | 176,031.24 |
| Clothes Driers | 17 | 228.17 | 3,878.58 |
| Air Conditioning Units | 19 | 1,432.66 | 27,218.50 |
| Refrigerators, commercial | 6 | 1,087.08 | 6,522.50 |
| Freezing Cabinets | 7 | 397.05 | 2,779.33 |
| Beverage Coolers | 71 | 321.41 | 22,820.00 |
| Ice Makers, Water Coolers | 2 | 147.57 | 295.15 |

## Storage Freezer Ready for Delivery




The storage freezer at the left includes one room for temperatures of -40° F. and another temperature safeguard room. Measuring 15 ft. by 12 ft. 6 in. by 10 ft. 4 in., it was constructed by the White Horse Cabinet Co. for Sharp & Dohme, Inc.

## Randall Vice President General Refrigerators

NEW YORK CITY — Louis J. Randall, for the past 12 years general manager and service manager of General Refrigerators Corp. here, has recently been promoted to the vice presidency of the company, and has assumed full control of the operations and sales policies of the corporation.

Randall announced that General Refrigerators plans to increase its district representation in order to give full coverage to its commercial refrigeration line throughout the United States.

## Gordon Tucker To Manage Midwest Electrical Council

MINNEAPOLIS — Appointment of Gordon Tucker, formerly chief of the sales planning and control division of War Assets Administration, as manager of the Midwest Electrical Council has been announced by Council directors.

Between his WAA job and his appointment as Council manager, Tucker was a sales manager for special equipment manufacturers.

## United Mfg. & Service Co. Moves to New Quarters

MILWAUKEE — United Mfg. & Service Co. here has recently moved to its new location at 405 South Sixth St., according to H. W. Howard, president.

The firm furnishes electrical wiring assemblies, power cords, and other equipment for the appliance industry.

## Legion To Cite Carrier For Hiring Handicapped

SYRACUSE, N. Y.—Carrier Corp., leading manufacturer of air conditioning and refrigeration equipment, has been awarded the National American Legion Award as the outstanding employer of physically handicapped veterans in the State of New York.

The award will be presented officially during the week of Oct. 3-9, which has been designated by Presidential Proclamation as national "Employ the Physically Handicapped Week."

Out of approximately 3,500 employes of Carrier Corp. in Syracuse, more than 38% are veterans. Of this number, 375 employes suffered some disability during the war. Many of these employes are wearers of the Purple Heart.

Carrier's Veterans Counsellor, James H. Merritt, has devoted a great part of his time to the welfare of veterans.

Special training courses have been open to veterans and particularly disabled veterans.

Howard M. Dirks, Carrier vice president in charge of personnel, in a recent statement concerning Carrier's veteran employment program, declared that veterans generally had compiled a fine record as Carrier employes.

"We have found men and women with military experience to be valuable members of our organization, individually and as a group," Dirks said. "We have had particularly favorable experience with so-called handicapped veterans, most of whom become superior employes when given opportunities in work to which they are adapted."

*Gross Savings Equal $1,857*

## Estimated Savings of $592 In 10 Years Convinces Family Freezer Is a Good Buy

CLEVELAND — How one family of four figured that they would save nearly $600—a conservative estimate—over a 10-year period by purchasing a home freezer was outlined in a recent "home freezer section" of the *Cleveland Plain Dealer*.

This family, after considerable mathematical computations on the food budget, came to the conclusion that they would make a gross saving of $1,857.60 in the 10 years.

Deducting from this the cost of the freezer—$329.75—and estimated operation cost—$144—and an interest charge of $197.90—6% annually on original investment—they got a net saving of $1,185.95.

Considering that it might be possible that there would be some service on the unit during the 10 years, they slashed this last figure in half and still found that they would save $592. So they bought the freezer.

In figuring their gross savings, this family divided their freezer savings into seven categories: meats, ice cream, vegetables, fruits, leftovers, shopping trip costs, and time.

In looking over their meat budget, they found that they consumed an average of ½ lb. of meat per person per day. For the four of them, that amounted to 60 lbs. per month. They thought they could save 10 cents per lb. by buying in quantity, but, to be conservative, they cut that saving in half. So 5 cents times 60 lbs. equals $3.00 per month savings.

The family consumed a quart of ice cream per week and paid 75 cents to a dollar for it. They found they could buy ice cream at $2 per gal. So they chalked up $1 per month saving there.

Vegetables, the family discovered, disappeared at the rate of 2½ lbs. per person per week, or 40 lbs. per month for the family. Figuring that only half of its vegetable purchases would be frozen, the family took an average price of 30 cents per lb. and multiplied that by 20 lbs. Quantity purchases would bring them a 25% saving. So 30 cents by 20 lbs. equals $6 per month. A quarter of that would be $1.50 per month saving.

The family did not have very good records of its fruit consumption. But it figured it consumed as much fruit as it did vegetables, so it jotted down a conservative $1 per month saving.

Leftovers from the dinner table, the housewife conjectured, was costing her 10 cents per day in wasted food. This came to $3 per month—pure saving with a freezer.

This particular housewife was in the habit of traveling two miles four times per week to the store on shopping trips—and an equal distance back again. With the freezer, she figured on one trip per week.

Estimating her car cost at six cents per mile, with three four-mile trips saved per week, she figured she was saving 72 cents per week or $2.88 per month.

The housewife also learned that the freezer saved her time about the house, too. She saved 20 hours per year over former canning time, another 20 hours by cooking and baking in quantity, 50 hours a year in shopping trips, and 50 hours by cleaning and preparing food in large batches for the freezer; a total of 140 hours per year.

Conservatively figuring her own labor at about 25 cents per hour, she arrived at a $2.50 per month saving.

She also found that she could save about 60 cents per month by buying food for her dog in quantity and freezing it.

All these savings totaled $15.48 per month, $185.76 per year, or $1,857.60 in 10 years.

## *Dealer's Fourth Offspring Prompts Birth of New Selling Idea*

ROCHESTER, N. Y.—Baby needs a new pair of shoes, but that ain't all. Daddy needs to sell a lot of appliances.

As the recent father of a bouncing baby girl (his fourth), Dealer Harry Feldman had to figure out a way to accomplish just that. His solution: stage a "Buy for Baby Sale" inviting customers to drop in, look over his line, and perhaps help out the project by making a purchase.

As one feature of the promotion, Feldman ran an advertisement saying: "You know what expenses are these days. Harry just has to sell a lot of appliances to feed and clothe his four little girls."

### *Firm Gets 50-Year Charter*

SAN ANTONIO, Tex.—Fifty-year charter of incorporation has been granted Refrigeration Rental Service Inc. Incorporators are Bessie B. Brown, C. A. Brown, W. T. Beard Jr.

## Scalding Corn on Cob Is Vital To Preparing It for Freezing, Tests Disclose

ST. PAUL—Scalding corn on the cob is absolutely essential in preparing it for freezing, Mrs. Lillian Anderson, of the frozen foods laboratory of the University of Minnesota, advised frozen food manufacturers and home freezer users, following experiments at the university laboratory.

The tests, she reported, showed that if corn on the cob is not scalded it develops a cobby flavor after a few weeks in freezer storage. When scalded it will keep well for eight to 12 months, she said.

Golden bantam types of corn are preferred for freezing. Hybrid corn is also well adapted to freezing due to its uniform maturity, she said. Golden midget is another variety recommended because the small ears are convenient to store and the shorter scalding and reheating time required make for better texture.

She said tests indicate corn is at the proper maturing stage for freezing for only a short time, usually no more than 48 hours. If the milk spurts out freely when a kernel is pressed with the thumbnail the corn is at about the right stage for freezing.

She reported best results in scalding are obtained if 12 midget ears, 1¼ or less inches in diameter at large end of ear are scalded for 8 minutes. For seven small ears between 1¼ and 1½ in., 8 minutes; or five medium to large ears over 1½ in. for 11 minutes.

### *Retail Dollar Sales for August Remain 8% Above 1947 Level*

WASHINGTON, D. C. — August dollar sales of independent retailers averaged 8% higher than in August last year but were unchanged from July, states the U. S. Census Bureau.

Motor vehicle dealers' reported August sales as 31% above last year while lumber and building materials dealers showed 20% gains. Furniture store dealers reported an 11% increase. Department store sales were up 8%.

## Twin City Groups To Hold Shows Oct. 1-9

MINNEAPOLIS—Appliance dealer associations in both Minneapolis and St. Paul will sponsor exhibitions in connection with local "Home Shows" from Oct. 1 through 9, according to C. H. Stephenson, manager of the two associations.

The Electric Appliance Dealers Association of Minneapolis will cooperate with the Northwest Lumberman's Association, the Minneapolis Contractors and Builders Association, and the Minneapolis Builders Exchange to stage "Your 1949 Home Display" in the Minneapolis auditorium. Individual dealers will fill most of the association's exhibit space.

The St. Paul Appliance Dealers Association will hold its exhibition in conjunction with the St. Paul Home Show in the St. Paul auditorium. Appliance distributors and manufacturers will do the exhibiting with dealers manning the various booths during the show.

## Appliance Dealer's Ad Fights 'Slow Monday' Blues

BINGHAMTON, N. Y. — Thomas, home furnishings and appliance store at 162 Water St., features a "Slo-Day Special" each Monday to pull store traffic on this traditionally quiet shopping day.

The store heads its Monday advertisement with the caption: "Slo-Day Special." Copy says: "Monday is our slow day. . . . We'd like to be busy every day."

## Minnesota Contractor Opens New Shop on U. S. Highway 10

NEW YORK MILLS, Minn. — Al Bolmgren, electrical contractor and dealer here, recently opened his new appliance store on U. S. Highway 10, just outside of town. A large appliance display room occupies the main floor. A complete repair shop and stock room are located in the basement. Living quarters are on the second floor.

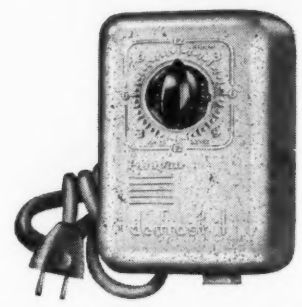
## Admiral Sponsors First Telecast of Notre Dame Game over Midwest Chain

CHICAGO—The Notre Dame-Purdue football game from South Bend, Ind., Sept. 25 was the first sports event to be telecast over the newly-formed midwest chain of television stations affiliated with the American Broadcasting Co., according to Ross D. Siragusa, president of Admiral Corp., who announced Admiral's sponsorship of that game as well as three other Notre Dame games.

Earlier Admiral had announced its sponsorship of the games in the Chicago area over WBKB, making use of that station's link relay system from South Bend. The agreement reached with ABC calls for WBKB's telecast to be fed through coaxial cables to the following stations: WBEN-TV Buffalo; WEWS Cleveland; WSPD-TV Toledo; and WTMJ-TV Milwaukee. In addition, after the first game the facilities of Detroit's WXYZ-TV will be added.

## Automatic Defroster Has 4 Settings To Control Length of 'Off' Cycle

TWO RIVERS, Wis. — Automatic night defrosting of any household refrigerator can be achieved with the new "de-frost-it" accessory, claims the Paragon Electric Co. here, manufacturer of electrical timing devices.



The device, which will be distributed through refrigeration wholesalers as well as distributors of appliances, hardware, and electrical equipment, will work with any electric refrigerator operating off 115 volt, 60 cycle, a.c. current, will handle loads up to ⅓ hp. and 5 amp.

Measuring 3½ in. by 2¼ in. by 5½ in., the de-frost-it is designed to be fastened on the wall beside the refrigerator. The refrigerator cord is plugged into a receptacle in the bottom of the device, which also has cord to be plugged into the house electrical outlet.

Defrosting occurs after 1 a.m., the length of the defrost cycle being adjustable to meet varying requirements, the manufacturer states. Another feature of the device is the "skip-defrost" setting which should be employed when ice cream or frozen desserts are to be stored in the freezer compartment overnight. This skips the defrost cycle.

Several advantages for automatic nightly defrosting by means of the de-frost-it are suggested by the manufacturer.

Eliminating hand defrosting "ends the drudgery of cleaning out freezer frost, removing and replacing foods in refrigerator. Frost accumulation on the freezing unit draws and holds food odors. Nightly defrosting washes away refrigerator odors and makes the unit more responsive to refrigerating needs.

"Heavy frost or ice cannot accumulate on the freezing unit to choke off refrigeration, retard efficient operation. . . . Automatic defrosting increases the life of refrigerator motor and compressor. With no frost accumulation the motor runs less to maintain required temperature . . . less electricity is consumed."

On the face of the device, which is finished in white enamel, is a red pointer with a 24-hour dial. There is also a lever which adjusts the length of the defrost cycle. Inside the timer is an electric clock.

First step in installing the de-frost-it is to defrost the refrigerator completely, clean the freezing unit, and wipe dry, explains Paragon.

Next, hang the device on the wall, plug the refrigerator cord into the de-frost-it, and plug the de-frost-it cord into the wall receptacle.

Move the defrost control lever to position No. 1 on the defrost cycle, making sure that the time pointer is not between midnight and 6 a.m.

Turn the red time set knob to the correct time of day.

It may be necessary to adjust the setting of the defrost period, points out the manufacturer. To do this, let the refrigerator operate for a week with the setting at the No. 1 position. When properly defrosted at night there should be only a tissue-thin film of frost on the freezing unit in the morning.

If there is too much frost, change the setting to No. 2 position, and so on up to No. 4, with a week's interval between changing the settings, until the proper frost condition is observed. The "off" period during defrost with this device ranges up to about 4½ hours, it is said.

Nightly defrosting will not thaw frozen foods, Paragon asserts, but defrosting should not be attempted with ice cream or frozen desserts in the evaporator. Skip the defrost cycle in this event by turning the control lever to the No. 0 position.

Drippage during automatic defrosting is claimed to be slight, just a few tablespoonsful each night, which can be caught in the drip tray cover or the drip tray itself. If meats or fish are stored in the tray, a shallow dish or tray should be placed over the tray to keep drippage off the food.

There is no need to change the refrigerator temperature control setting when the de-frost-it is installed, Paragon claims.

When leaving for a vacation, the householder should turn the refrigerator off by means of its temperature control knob, or pull the refrigerator cord out of the de-frost-it. The manufacturer suggests leaving the de-frost-it cord connected so that it will not be necessary to reset the device when starting the refrigerator up again unless there has been a power failure.

## Northland Electric Supply Maps Plans for $200,000 Warehouse

MINNEAPOLIS — Erection of a $200,000 office and warehouse on the southwest corner of Portland Ave. and Tenth St. here is planned by the Northland Electric Supply Co., according to D. E. Ford, vice president and general manager.

Ford said that construction on a one-story structure of reinforced concrete and brick will begin in early spring. Dimensions of the building will be 160 by 150 ft. An adjacent parking lot will handle 40 cars.

The firm, which is said to do an annual business in excess of $4,000,000, was founded in 1920. It has occupied its present quarters at 309 S. Fifth St. since 1928.

## Ranges To Roll Off 4 Main Assembly Lines at New Huge Hotpoint Plant

CHICAGO—What is called "the world's largest electric range plant" incorporating revolutionary mass production techniques occupying one million square feet of manufacturing space was opened for formal operations the last week in September by Hotpoint, Inc.

James J. Nance, president, said that the new plant has a rated capacity of 600,000 ranges a year. Nance addressed a group of Chicago industrial and civic leaders who attended dedication ceremonies observing the plant's formal opening.

The beginning of formal production in the plant marks the completion of "the greater Hotpoint program," which required an investment of more than $20 million in new manufacturing facilities. Nance termed the new range plant "an investment in the future of electric cooking which sweeping acceptance has established as a dominant factor in the appliance industry."

All machinery is single-purpose type designed to speed production in assembly line operations similar to those which "made the automobile a standard American commodity," Nance said. Materials received at the eastern end of the plant, flow westward along sub-assembly lines, and emerge from conveyors in the warehouse as the finished product, ready for crating and shipping.

### 7 MILES OF CONVEYORS

The new plant is a model of streamlined production flow with seven miles of conveyors which channel range sub-assemblies and parts to four main range assembly lines. These four assembly lines have been designed for maximum flexibility in changing from one model to another without interrupting the plant's overall output.

Finished ranges, after passing inspection stations on the final assembly lines, are lifted by elevator to overhead conveyors, and then proceed to the warehouse for crating and shipping. At peak operations the new plant will ship 32 railroad cars of ranges daily. In addition to rail shipment, the warehouse is equipped with ramp facilities to accommodate seven trucks for local deliveries.

The plant will unload 16 railroad cars of incoming materials each day. A piece of steel arriving at the new factory in the morning reaches the warehouse as a completed range the same day.

The plant contains a complete range finishing department. Overhead conveyor lines above the enamel room have a storage capacity for parts for 800 ranges.

Engineers pointed out that many phases of fabrication are carried out through specially designed equipment which provides a degree of automatism never before approached in the manufacture of electric ranges.

### PRESS STAMPS RANGE DRAWERS

Typical of this unique equipment is a 450-ton Verson range drawer press. This machine, the only one of its kind in the world, was designed by Verson Allsteel Press Co. in conjunction with Hotpoint engineers. Cold roll stock is automatically fed from a coil cradle through a stock straightener into the huge press. The first of eight dies in the press blanks out the stock. The blanked stock then proceeds through consecutive stages of drawing, trimming, forming, and beading. At each stroke of the press a completed range drawer emerges ready for cleaning and finishing.

A battery of four Bliss presses was specially designed to perform completely automatic range body fabrication. Cranes carry 15 tons of sheet steel to a Dexter feeder. The sheets then automatically move through a roller to a slitter which trims the sheets. Carried by a pickup conveyor the steel is then fed to the four presses which form the electric range bodies.

Nance said that despite materials shortages, the new plant was completed in the 15-month period scheduled for its construction. Unloading and shipping operations all housed under one roof, fluorescent lighting, and modern labor-saving equipment, were cited as principal contributions to new standards of employe working conditions in the new plant.

## *Listing In Dealer's Ad Gives Key to Value of Appliance Trade-Ins*

FORT WAYNE, Ind.—A guide for the evaluation of sale prices on used (trade-in) electric washers, ranges, and refrigerators in this area was provided in a recent advertisement by Frank's large appliance departments, one of the state's biggest.

Twelve different makes of conventional washers were listed at $25, with "should sell for" listings ranging from $37.50 to $46.50, including American Beauty, Westinghouse, Kenmore, Horton, Thor, Zenith, and others.

Another lot of Thors, Hortons, and A. B. C.s were offered at $42.50, described as "a few exceptionally nice" washers.

Automatic electric washing machines were individually listed as Westinghouse B-3 Laundromat, $227.50 and $209.50; Bendix deluxe bolt down, $179.50; and Bendix standard bolt down, $147.50.

A Bendix electric ironer was offered at $169.50; Speed Queen, $119.50.

Good electric refrigerators were listed at $37.50 for a Norge, to $99.50 for a Coldspot. Gas ranges were priced at $37.50 for a Detroit Jewel, New Process and Prosperity, to $87.50 for a Roper double oven. Electric ranges were listed at $237.50 for a 1947 Westinghouse, like new, to $49.50 for a G-E and Westinghouse in "exceptional buys."

## *All-Electric Kitchen Will Be Given Away at Legion Conclave*

CINCINNATI — The Crosley and American Central Divisions of the Avco Mfg. Corp. have developed an ultramodern, all-electric kitchen—including even television—which has been donated to the American Legion 1948 Convention Corp. of Florida by the J. J. Seagram Post.

The kitchen will be given away on Oct. 18 in the Orange Bowl at Miami, Fla., as a highlight of the National Legion Convention. The kitchen is to be on display on Biscayne Boulevard in Miami for three weeks prior to and during the convention.

### 2,005 Trips Between Appliances

## *Placing Refrigerator Close to Range Saves Steps, Time-Motion Study Shows*

EVANSVILLE, Ind.—In preparing a month's meals, a woman makes 1,375 trips into the kitchen from other rooms and outside, it was found in a time-and-motion study of kitchen work carried out by the Homemakers' Institute here, sponsored by Servel, Inc., manufacturer of a gas refrigerator.

In addition to this, Mrs. Average American makes 2,005 trips every 28 days between the three major kitchen appliances—the refrigerator, sink, and range.

To help homemakers save time, energy, and shoe-leather in preparing meals, the Institute made a study of the most efficient ways to plan a kitchen so as to reduce to the lowest number possible the trips necessary in preparing a meal.

Here is what the home economists found:

First, there should be adequate work and storage space near each of the three major household appliances.

Second, most equipment—bowls, dishes, glasses, and silverware—should be located near the refrigerator. Equipment was used at the refrigerator 50.3% of the time, at the sink 30.7% of the time, and at the range only 19% of the time.

Third, most trips within the kitchen occur between the refrigerator and range. It is possible to practically eliminate 827 trips in preparing 84 meals by placing these two units close enough together so that the space between them is no more than a step or two.

Fourth, unnecessary steps can be saved when doorways are placed between the refrigerator and sink since these are the appliances most frequently used first on arriving at the kitchen.

## Fedders-Quigan Appoints Air Cooler Regional Mgr.

BUFFALO—E. A. Bonneville, sales manager of the Fedders-Quigan unit air conditioner division, announces the appointment of Joel A. Wier as regional manager for the southeastern territory for Fedders room air conditioners with headquarters at 25 Honour Circle N. W., Atlanta.

**Joel A. Wier**

Wier was formerly sales manager for the heating division of the Charles S. Martin Distributing Co. of Georgia.

His territory will cover the southeastern states from Tennessee and North Carolina to Florida.

### Western Service Firm Starts

OCEANSIDE, Calif.—Refrigeration Service is the firm name under which Arnold E. Graham and Kenneth Cass have published a certificate that they are operating at 323 North Hill St.

## *Record Volume Seen for Wyoming Locker Plants As Big Game Hunting Season Gets Under Way*

CASPER, Wyo.—Frozen food locker plant operators here report that from early indications the 1948 big game hunting season will be the biggest in Wyoming history.

A survey of three storage plants revealed that during the first week of hunting they received 1,094 antelop, 87 elk, one bear, one deer, and one moose. This was considerably heavier than for the first week in any previous season, and the elk and deer season has not yet gotten under full steam.

For the first week, the Indian Ice plant reported 643 antelope and 37 elk; Frozen Food Lockers, 401 antelope, 50 elk, one bear, and one moose; North Casper Food Lockers, 50 antelope and one deer.

County Agent Norman French said that considerable of the early kill of antelope meat had been lost through spoilage in the field. During the warm weather of the early part of the hunting season it is imperative that the game be skinned in the field, he declared, and the Casper locker operators said that about 10% of the antelope brought into their plants still had the "jackets" on. French pointed out that there is a terrific loss of meat during the early part of the season, most of it caused by improper care of the carcass.

Field tests conducted by the state agricultural extension service and the University of Wyoming have shown conclusively, he declared, that antelope should be skinned in the field promptly after killing. The hide holds in the animal heat and tends to sour the meat.

## Frozen Food Radio Program To Get 'Bing' Crosby Send-Off

BOSTON — "Bing" Crosby will start a series of daytime radio programs sponsored by Vacuum Foods Corp. to advertise its Minute Maid concentrated, quick-frozen orange juice, it was announced here recently.

Crosby has been elected a director of the corporation.

## Davis Named Field Agent By Copeland Refrigeration

SIDNEY, Ohio—William J. Davis has been named a field representative for Copeland Refrigeration Corp. on its line of refrigeration equipment, it is announced by Frank J. Gleason, Copeland vice president.

**Wm. J. Davis**

Before joining forces with Copeland, Davis had been associated with Jack & Heintz Precision Industries, Inc.

## *Carrier Pays 25-Cent Dividend*

SYRACUSE, N. Y.—A dividend of 25 cents per share on the common stock was declared recently by the board of directors of Carrier Corp. The dividend will be payable Oct. 21, 1948, to these persons who hold stock of record at the close of business on Oct. 7, 1948.

## *Warrington Succeeds Bauder as Executive Secretary of NFFLA*

CHICAGO—S. T. Warrington has been appointed executive secretary of the National Frozen Food Locker Association, according to Harry Flory, president of the association. Warrington's appointment came as a result of a meeting of the NFFLA executive board at the Hotel Sherman recently in Chicago.

Keith J. Bauder of Fort Plain, N .Y., has been executive secretary of the National Association since November, 1947. Bauder's voluntary job as executive secretary of the association followed a year during which he served as chairman of the NFFLA public relations committee. Previous to that time, Bauder had envisioned a public relations program for the NFFLA and was able to put it into practice during 1947. Through the work of Bauder's committee, in which he was assisted by George R. Schiemer as public relations counsel, many merchandising and advertising aids were made available to members of the NFFLA.

Warrington was first approached to become executive secretary of the NFFLA in 1944. Unable to accept the position at that time, Warrington continued as senior agricultural economist with the United States Department of Agricutlure in Washington, D. C. In 1945 he formed the Warrington Co. in Austin, Texas.

Warrington has been associated with the frozen food industry practically since its inception. "Sib," as he is known to hundreds of locker operators and frozen food men throughout the country, helped organize the Minnesota Frozen Food Locker Association while he was on the staff of the University of Minnesota. He arranged the first annual locker operators short course at the University of Minnesota and in 1939 joined the Department of Agriculture in Washington, D. C.

Warrington brings to the Association a knowledge of frozen food and especially a knowledge of the frozen food locker plant industry in the United States. He is acquainted with all facets of the industry, and has a well-founded conception of frozen food locker plant needs through his work during the war years when he counseled with the O. P. A., W. P. B., and W. F. A.

While in Austin, Texas, Warrington was associated with Consolidated Frozen Foods and later built two locker plants which he still operates in towns in Texas. Just previous to his appointment with the NFFLA, Warrington was general manager of Food Lockers, Inc., a frozen food organization located in Chicago.

Warrington will conduct association business from the new NFFLA offices at Room 1018, Mercantile Exchange Building, 308 W. Washington Blvd., Chicago.

## *Hanighen Air Conditioning Bid Accepted for Hospital Annex*

OMAHA, Neb.—The J. J. Hanighen Co., Omaha, was low bidder on air conditioning, ventilating, heating, and plumbing for a $1,686,460 135-bed addition to St. Joseph's hospital here. The new five-story building will be completely air conditioned.

The structure, of poured concrete and reinforced steel construction, will be 260 ft. wide and 160 ft. long, and connected to the main hospital by a two story corridor. Now with 450 beds, it will be one of the country's largest Catholic hospitals when the addition is completed.

# Air Sterilization Technique May Get Boost with New Control Equipment

CHICAGO—Possibilities and problems of air sterilization methods when used in combination with air conditioning systems was discussed by Prof. B. H. Jennings, chairman, Department of Mechanical Engineering, Northwestern university, in a discussion presented before the Chicago section of the American Society of Refrigerating Engineers.

"Air sterilization, which is one of the newer fields of engineering and medicine, presents a real challenge to the combined efforts of the engineering and medical professions," Prof. Jennings declared. "Something must be done to reduce the toll of air-borne disease which amounts to a loss of the working effort of more than 500,000 people per year.

"Intestinal diseases, such as typhoid fever and dysentery, have been practically eliminated through water and sewage control. Air control is now the pressing problem. The engineer's role in this problem is that of reducing the number of pathogenic organisms in a given space to such a small amount that the chance of cross infection becomes remote. This objective can be reached by:

"(1) Air dilution using excessive amounts of outside air.

"(2) By filtering and electrostatic precipitation of bacteria and dust from the air circulated in a space.

"(3) By use of ultraviolet lamps, where these can be employed without causing damage to the occupants of the space.

"(4) By use of chemical vapors in the air.

"Items 1 and 2 have definite physical and economic limitations which cannot be exceeded," the speaker stated.

"Item 3, ultraviolet lamps, has been approved by the AMA and, where the problem of human exposure can be controlled, is quite effective. The most effective bactericidal range is the wave length of 2537 Angstroms and slightly above. Lamps which deteriorate in their wave length to less than 2200 Angstroms produce ozone and may be harmful. One hundred microwatts per square centimeter has been adopted as the unit of germicidal intensity.

"However, people under continuous exposure cannot stand more than 0.1 microwatts per square centimeter. The lamps must be so placed that the radiations are not delivered directly against the skin and eyes of the people in the space. Such lamps have been effective in reducing cross infections in hospital wards, barracks, school rooms, and have been employed for reducing molds in high humidity refrigerators.

"The effective use of chemical vapors for air sterilization goes back some seven years when the high efficiency of certain of the glycols for killing bacteria in air was discovered.

"Triethylene glycol is the most effective one of this group. It is a high-boiling-temperature liquid (548 F) not readily volatile, but not much vapor is required in a treated space to kill bacteria.

"Under normal inside temperatures, a concentration of 0.004 milligram per liter of air is all that is required. At this concentration the material has no odor, is completely non-toxic, and cannot be observed by people in the treated space. Killing of bacteria under such conditions is almost instantaneous and the danger of cross infection thus is eliminated.

"One of the big difficulties with using this chemical has been the problem of getting it into the air and controlling its concentration as it is not possible to bring it up to its boiling temperature because it breaks down chemically.

"Thus, it is necessary to get the material into the air under partial pressures. Various designs of machines have been evolved to accomplish this end, and it seems probable that there will be two or three new types on the market this year.

"The basic discoveries and patents on this material made at Northwestern university and the University of Chicago have been put in the hands of the Research Corp. for administration, and many companies are applying to the corporation for license rights.

"Recently, activity in this connection has been directed toward supplying less glycol to the air than that required for immediate killing of all bacteria, so that partial protection is provided the occupants in a space. The ultimate solution will probably be a combination."

## Servicemen, Contractors Take First of Refresher Courses

OMAHA, Neb. — Forty electrical servicemen and contractors attended the first of a series of refresher courses here in the Westinghouse Building.

Bi-monthly classes will be held this fall in Lincoln, Grand Island, and Norfolk, Neb., and Sioux City, Iowa, as well as in Omaha, according to S. C. Dodson of Omaha, president of the North Central Chapter of the National Electrical Contractors Association, which is sponsoring the schools.

## Brown Appliance Opens In N. Y.

BUFFALO—Maxwell Brown, president of Brown Motor Sales, Inc., has announced the opening of Brown Appliance, 2786 Delaware Ave., this city.

Being operated by Allen J. Brown, with Clyde Brum as manager, the new business offers a full line of electric household appliances. Philco, Admiral, and Norge lines are featured.

# Regardless of How Valve Is Sold, 1-Year Warranty Holds, Detroit Lubricator Says

DETROIT—The Detroit Lubricator Co.'s guarantee on its expansion valves is identical whether it is sold through refrigeration wholesalers to contractors or dealers, or sold direct by the company to a manufacturer of original equipment, it is stated by F. G. Coggin, manager of the Detroit Lubricator refrigeration division, in a comment on statements made in the article "Contractors Air Viewpoints on Warranties—" published in the Sept. 13 issue of the NEWS.

Coggin pointed out that the article discussed the policy of a valve manufacturer "who had reduced the free warranty period from one year to three months," but that the discussion of this particular phase contained some mis-statements and he addressed a letter to Emil F. Flanik, chairman of the N.A.R.C. committee, who had written the discussion.

Stated Coggin in his letter:

"The guarantee on our product is identical whether it is sold through refrigeration wholesalers to contractors or dealers, or sold direct by us to a manufacturer of original equipment. I quote from our published guarantee:

" 'Valves are guaranteed against defects in material and workmanship for a period of one year, and inoperative valves will be repaired upon their return to our factory transportation charges prepaid. Valves beyond one year will not be repaired, but are replaceable under the schedule shown in our optional Replacement Policy. Valves beyond three years are not replaceable, but will be scrapped upon receipt.'

For those who wish "Over-the-Counter" Replacement with New Product Rather than Repair, an Optional Policy is provided.

"It is under this optional schedule which is available to refrigeration contractors-dealers and manufacturers alike, that we will replace with new product for a 90-day period and at a graduated charge beyond 90 days through three years."

# Promotions-Publicity-Pushing Doorbells Build Reputation, Sales for Pickering

SALEM, Mass.—Oldtime specialty selling methods adapted to some present-day situations—"a war bride's school" is an example—has resulted in outstanding sales records for the George W. Pickering Co. chain of appliance stores which operate in the surrounding North Shore area.

Door-to-door selling and most of the old tried-and-true specialty selling ideas—plus some new ones—have made North Shore area residents very conscious of the fact that the Pickering Co., which before the war was a fuel dealer, is selling General Electric appliances.

Not only does the Pickering firm use weeks of newspaper, radio, and direct mail advertising to announce its promotions, but it follows through by supplying the newspapers with stories on the promotions while they are in progress.

That, company officials have found, puts the Pickering name right in the news columns where readers can't miss it.

Though Pickering has sold appliances only since the end of World War II, the firm has been established in the fuel business here for the past 110 years. It has seven branches in addition to the main store here.

When Horace E. Davenport, president, decided to enter the appliance field, he selected a Navy veteran with plenty of prewar appliance merchandising experience in the area—Tim Noonan—as his sales manager.

Noonan went to work to get the Pickering name recognized in the appliance field as well as the fuel field.

## One Foot In the Door

**Calling on old customers is part of a Pickering salesman's daily routine. He offers service and reminds her of Pickering's continued interest.**

He started out by selecting a sales crew on the basis of aptitude tests and a thorough screening. Then he conducted a survey of his trade territory that gave him information on the families on every street, including their buying habits and appliance requirements.

He put the sales crew to work out in the field. The men are required to contact 10 new families and four users of Pickering products each day, in addition to their other calls. To the users, they offer service and assurances of the company's continued desire to serve them.

Then, each morning, the salesman turns in a report on the number of calls made the previous day, showing prospects contacted, future callbacks, service calls, and canvass calls.

"From these reports the management obtains a clear over-all picture and has at all times a sound basis for future planning," Noonan stated.

All employes of the company are also considered to be sales representatives. They are taught to be alert to sales opportunities and are given a share of the sales profits.

In addition to these direct contacts with the public, Noonan also inaugurated a series on promotions that are still going strong.

### 'HERE COMES THE BRIDE'

One promotion idea was to conduct a "war bride's school" to acquaint new citizens with the operation of modern American appliances.

"Here Comes the Bride" was the clarion call to Pickering's. It was shouted in newspaper advertising, played in the form of Wagner's "Bridal Chorus" over the air, and chanted in direct mail invitations.

The brides turned out in numbers, according to Noonan. On arrival at the store, they were presented with a book entitled "To the Bride" which gave the story of better living through the art of homemaking—with General Electric appliances, of course.

*(Concluded on next page)*

## Prospects Make Good Saleswomen


**A war bride who attended Pickering's school and also entered the recipe contest comes back with her husband to show hubby the appliances she just has to have in order to complete her homework. Having learned all the pointers at school, she makes a good impromptu saleswoman.**


**Tim Noonan (left), Pickering's appliance sales manager, puts on an enthusiastic demonstration of a garbage disposal for his sales representatives. With years of selling experience behind him, he is not talking from the book, either.**

**Saleswoman Norma Grundy (right) really enjoys demonstrating the advantages of an automatic washer to a war bride. Learning all about the automatic washer was only one lesson the bride received at Pickering's homemaking school.**

## War Bride School, Recipe Contest, 'Dream Kitchen' Make News for Local Papers, Business for Dealer

*(Concluded from preceding page)*

The book contained a wealth of household advice and stressed the importance of arranging kitchen appliances according to the plan. Such planning is a Pickering service.

Alice Horne, Pickering's advertising and sales promotion manager, went to work on the school and saw to it that local newspapers received feature stories and pictures.

Four newspapers carried a picture and story on a British war bride. One paper carried a full-page article entitled "Bride's Cook School Blow at Divorces."

At the end of the school, 175 brides received a diploma conferring on them a degree in the "Fundamentals of Food Preparation." All the brides also filled out prospect cards, showing their name and address and appliances in which they were interested.

**PROSPECT CARDS A 'MUST'**

Filling out prospect cards is a "must" for all participants in Pickering's promotions.

Another successful promotion was a recipe contest in which residents in the Pickering trade area were invited to send in their choice, personal recipes. Then, on four successive Mondays, the contestants gathered in Pickering's "Dream Kitchen" to witness the preparation of the winning recipe.

One week, the contest covered main dishes, the next salads, and then desserts and refreshments. Weekly winners received a table radio and a chance at the grand prize—an automatic blanket.

A recipe book was compiled each week from the recipes submitted. A special feature of the book was the listing of the name and address of the originator with each recipe.

Four weeks of publicity preceded the recipe contest. While it was running, Miss Horne supplied the newspapers with running accounts of the procedings.

After the contest was over, each contestant received a "thank you" note from the store.

A third promotion is one of a continuing nature. Under this one, Noonan offers the facilities of the Pickering "Dream Kitchen" to various local men's and women's clubs as a meeting room. As an additional incentive, he has set up a large television receiver and screen there for their enjoyment.

Publicity for the store on this idea comes indirectly through the clubs themselves. Whenever they announce their meetings—and the announcements appear in the club columns of the local papers—their place of meeting is listed as "Pickering's Dream Kitchen."

* * *

### 'This Is News'

**Alice Horne (left), advertising manager, discusses newsy angles in a promotion piece with Carolyn Wade. People will read real news, she finds, and tries to get as much as possible in her copy.**

## Board of Strategy Maps out the Day's Work


**Tim Noonan and his carefully selected sales crew get together every morning to compare notes and plan the day's campaign.**

## Factory Annex Boosts Admiral's Video Output

CHICAGO — Completed in August at a cost of $400,000, a two-story brick annex to the television equipment manufacturing plant of Admiral Corp. at 3800 Cortland St. here, has allowed an estimated 20% increase in production, according to Ross D. Siragusa, president.

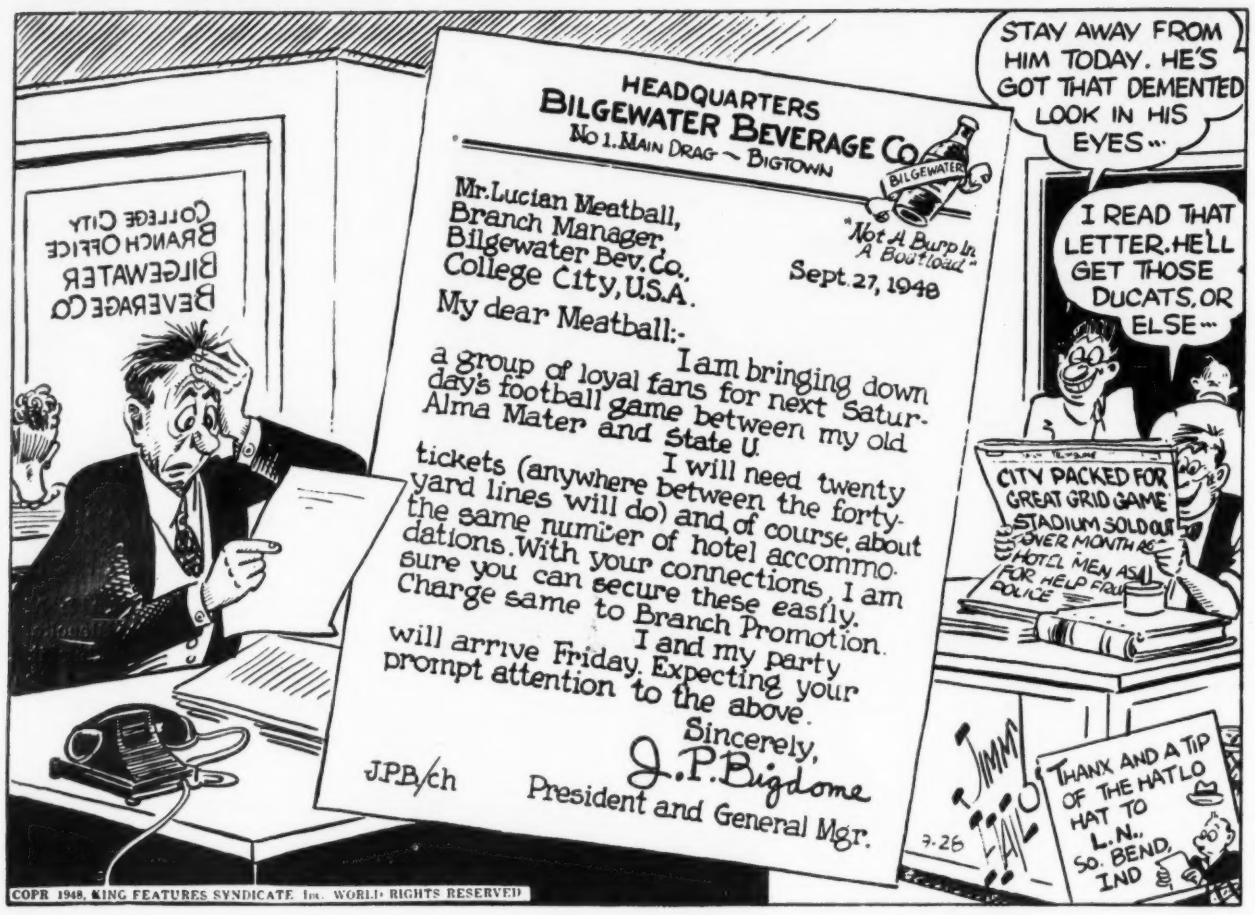
Although Admiral Corp. was producing television sets at the rate of approximately 750 sets daily, Oct. 1 saw this figure upped to 1,000 daily.

The annex added 66,000 sq. ft. of floor space to the 260,000 sq. ft. of floor space available in the one-story main plant which covers an entire city block. Entry to the building is through the main plant.

## Store Sold, Utica Appliance Dealer Disposes of Stock

UTICA, N.Y.—Jacobson & Marsh, appliance store at 677 Bleecker St., announced that the building it now occupies has been sold and that it is disposing of its entire stock.

## They'll Do It Every Time . . . . By Jimmy Hatlo



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# The 'Brass Tacks' Approach To Home Freezer Selling

*(Continued from Page 1)*

home freezers and the locker space; but it was evident that he was well on his way to such a life.

During nine months of the year, shopping and food preparation for freezing is a family operation for only three days a month, usually Saturdays. From November to February, it is one day or about 12 hours a month. And, the savings on the cost of the family's food during the period of the first year of freezer ownership paid for the entire investment in their home freezers.

What a story for a retail salesman of home freezers to carry to his prospects! As he visits their home in the quiet hours of an evening—where he would find both the husband and wife at home and more than willing to discuss with anyone, The Better Life—along with the present high cost of food and what they might do to reduce it—this story should find a receptive audience.

But, alas, there are very few such retail salesmen today—or at least, the writer has not heard of many.

No electrical appliance being offered to the public today has the romance and glamor of the home freezer. And none supplies so well the features which so completely fit the basic buying motives which cause anyone to buy anything; namely,

COMFORT & CONVENIENCE
GAIN & ECONOMY
SAFETY & PROTECTION
SATISFACTION OF PRIDE
SATISFACTION OF AFFECTION

But, again alas, who is really telling this story to the great American public? Not very many hard-hitting retail salesmen, I am sure.

Old-timers in the electric refrigeration industry are fond of sprinkling their sales reminiscences with pungent anecdotes about the Good Old Days when "it took selling—real selling, by George, to sell a four hundred dollar, untried appliance to someone who had a fifty dollar ice box."

You can hear them (I mean us) at any sales meeting—telling each other—and a respectful, we hope, younger sales generation—what a tough fight it was (as we bask in the consciousness of a battle well won).

And it *was* a tough fight. Anyone who went through the doorbell-pushing days of early electric refrigeration merchandising—trying to sell a completely new idea to people accustomed only to an old-fashioned, messy, unsure method of storing fresh foods—is entitled to take a bow.

"It was rough, but it was fun," we all say, as we take a bow.

Often I wonder how many of these Old Timers (and their younger audience) are reminded at this point of the amazing parallel between the home freezer sales problem of today and the refrigerator selling job we faced in the Nineteen Twenties!

This time the job is easier. The market for home freezers is, to a great extent, ready-made. People are sold on electric refrigeration and electrical living. This was not the case when the household refrigerator was introduced.

Millions of families now know from experience all about the economy, convenience, and health-giving qualities of electric refrigeration.

The fast-growing frozen food industry is already big business—and its a natural ally in the job of making the home freezer a *must item* in the American home.

It's true, of course, that a reaction against the first enthusiastic post war estimates of the Home Freezer market has set in. However: Any such pessimism is even more unwarranted than the wildly enthusiastic estimates which sprouted during the recent war. Starved sales imaginations had painted a picture of consumers magically converted to a wildly enthusiastic acceptance of frozen food as part of the completely different way of life which was to come about automatically with the war's end.

According to some of the estimates of the home freezer market (scrawled on luncheon table cloths and quoted in magazine articles three years ago) the industry's sales effort has fallen short. But I doubt if even a genuine elixir of youth could have matched some of the immediate market estimates which were made then.

*(Concluded on Next Page)*

# The 'Brass Tacks' Approach To Home Freezer Selling

*(Concluded from Preceding Page)*

That is not to say that there was no foundation for some of these tremendous sales potential figures. The trouble was that many of us did not realize we were talking about a long range market potential. We were dreaming about thousands of door-to-door salesmen who *should* be out telling the story of the economy and convenience of a home freezer.

Actually, I believe we have done remarkably well in translating a good percentage of that potential into actual home freezer sales. Thousands of prospects have walked into retail stores and *bought* their freezer.

Now, I believe, all of us have come to see that it is going to take an old-fashioned coats-off, hard-selling educational campaign to make that full potential a reality.

To date the home freezer volume of sales may have been a great disappointment to many retailers who apparently expected hundreds to storm their doors to buy home freezers.

But, home freezer sales are not disappointing to those retailers who have been using one at home, and whose family is enthusiastic over what it has done to raise their standard of living and reduce their food bill.

Sales haven't been disappointing, either, to the dealer who has followed the advice of his manufacturer and installed a home freezer in his store—where it is, at all times full of frozen food—on which he gets a normal turn-over by converting thus displayed frozen food into home use—working to save money for the family.

Freezer sales haven't been disappointing to a dealer who has been working with the nearest locker plant to their mutual advantage, or with the nearest wholesale source of frozen food.

Freezer sales haven't been poor for the dealer who has held demonstrations in his store or in the neighborhood movie theater with which he has cooperated.

Freezer sales haven't been poor for the dealer who has told the story of the economy and convenience of living with a home freezer to the local Rotary, Lions, or Kiwanis clubs, and has asked said club to serve a frozen food luncheon at the members' own expense.

No, freezer sales have been disappointing only to the retailer who has already found it difficult to sell any or *all* of the electrical appliances now in abundant supply because folks just "aren't buying" these appliances.

I say the retailer who cannot sell home freezers, but who is sure he could "sell" all the scarce appliances he *cannot* get in sufficient quantity, is going to wake up some fine day to find he can't sell "the now scarce appliances" because when these scarce appliances become abundant they will be *harder* to sell than the present abundant appliances.

WHY? Because this dealer and his salesmen *are not selling today*. They have lost the knack (if—indeed—they ever had it).

We've got to use the same bag of tricks, if you please, that we used in the good old days of household refrigerator pioneering that some of us are so fond of recalling—if we're to get on the freezer bandwagon.

Going back to "One Foot in the Door" selling fundamentals, we've got to appeal to the buying motives that hit home before we can corral the home freezer prospect.

In the early days of the electric refrigerator, we didn't sell steel against wood, or electricity against the ice man. We sold convenience, economy, better health, new comforts, a higher standard of living.

Today's we've got to sell the gain and economy, convenience, protection, and safety of the home freezer in terms so simple and clear that it becomes a simple matter of arithmetic and logic for the consumer to buy.

## Ventilation Calculator Developed by U.S. Navy Now Available to Public

WASHINGTON, D. C.—A simple, rapid device for testing and balancing ventilating, heating, and air conditioning systems, which was developed by the Navy, is now available to the general public from the Office of Technical Services, U. S. Department of Commerce according to a recent announcement.

The ventilation testing calculator, a sturdy cardboard device, and full instructions for its use, were developed during the war by Naval engineers primarily for ship construction and alteration. Because of the similarity of shipboard and land ventilating problems, however, the calculator is said to be useful for regular building purposes.

The calculator has several scales showing desirable ventilation standards for various sized areas, and methods of achieving them through orifice size and air velocity. Other scales can be used for computation purposes.

According to the instructions, careful original design of a ventilating system will minimize the need for subsequent readjustment or balancing, but will seldom eliminate it. Variations in quality of workmanship and in assumptions made during design make it necessary to check actual operation before the system is placed in regular use. Procedures for preparing tests are described.

Included in the instructions are formulas for computing air volume and velocity; use of velometers and anemometers; and methods of taking observations.

PB 89769s, "Ventilation Testing Calculator," including 10 pages of illustrated instructions, is priced at $1.50. Orders should be addressed to the Office of Technical Services, Department of Commerce, Washington, accompanied by check payable to the Treasurer of the United States.

## Buensod-Stacey Awarded Erwin Mill Contract

DURHAM, N. C.—Erwin Cotton Mills has awarded a contract to Buensod-Stacey, Inc., of New York City and Charlotte, N. C. for the installation of an air conditioning system in the weave rooms of Erwin's No. 1 mill, and in two departments in the No. 4 mill.

## *Avant Mfg. Co. Organizes To Deal In Air Conditioning*

LOS ANGELES—Avant Mfg. Co., Inc., has been formed in Los Angeles County, with a capital of $75,000, to manufacture and deal in air conditioning, heating, and plumbing equipment. Principals are: Maurice C. Varin, of Los Angeles; James R. Dysert, of Whittier, Calif.; and Shirley E. Brooks, of Culver City.

## Realtor Installs Air Conditioning

MIAMI, Fla.—Maurice Connell & Associates is installing air conditioning in the new Keyes Bldg. at 234 Biscayne Blvd., future home of the Keyes real estate organization.

## *Locker Plant Continues Service Despite Cave-In*

BUFFALO—A concrete-block wall, about 50 ft. long, and the roof of the showroom of the Frozen Food Center, 374 Buffalo St., Hamburg, collapsed recently, causing damage estimated by Merle S. Clark, owner, at $25,000. No one was injured.

Clark said none of the 630 food lockers was damaged and that the $70,000 worth of foodstuffs was still under refrigeration. The center is continuing to operate while repairs are made.

Most of the wall fell into an excavation which is being made on the north side of the building. An addition to the building is being constructed. The operator of a bulldozer escaped serious injury by leaping when the wall started to fall.

Charles Ibach, refrigeration engineer, who was making an inspection of the building at the time, was credited with preventing a fire explosion. He turned off all electrical and gas power when he heard the crash.

Two women customers and four employes of the Frozen Food Center, housed in a tile and glass brick structure, ran from the building when they heard "rumblings" and escaped injury.

Ibach attributed the collapse to vibrations set up from the bulldozer. Six home freezer units in the showroom were destroyed when the roof I beams collapsed on them. Contents of the showroom were deluged with hundreds of gallons of water insulating the roof.

# What's New

* * *

## Shallower, Counter Height 'Chill Chest' Turned Out

DEERFIELD, Mich.—A completely redesigned "Chill Chest" home and farm freezer model is now being produced here by Revco, Inc.

The new model is a 6-cu. ft. horizontal unit with a hermetically sealed condensing unit featuring a static condenser.

The top of the unit has been lowered to counter height, 36 in., and made perfectly flat to provide work space when the lid is closed, according to the manufacturer.

A new type positive locking latch with provision for padlocking is used. Counterbalanced hinges lift the lid with fingertip pressure and hold it open at any angle. The hinges protrude at the rear to provide ample air space behind the box.

The liner is made of aluminum and has the refrigerant coils brazed directly to it. The bottom of the liner is 15 in. above the floor, making for a broad, shallow food compartment. Thus even the shortest woman can reach to the floor of the compartment, the manufacturer declared.

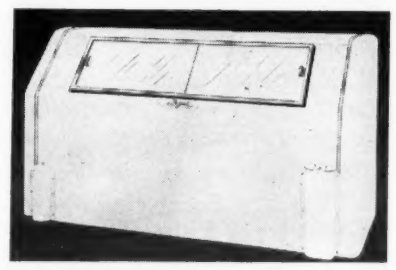
Lightweight movable dividers separate the food compartment into three sections.

Fiberglas insulation is used. The infrared baked enamel finish cannot chip, rust, or corrode, the manufacturer asserted.

The Chill Chest is provided with red and green warning lights. The green light signals current on and temperature normal. The red light signals current on but temperature rising. No light means current interrupted.

The new Chill Chest is being produced at the rate of 1,500 per month and is selling at the same price as last year's model, Revco states.

## Fogel Frozen Food Cases Provide Removable Doors



Fogel Model 72F

* * *

PHILADELPHIA—The Fogel Refrigerator Co. is now in production on a new frozen food self-service display case that features removable doors so that open-type or closed-type displays can be used as desired, William Fogel, president of the firm, announced recently.

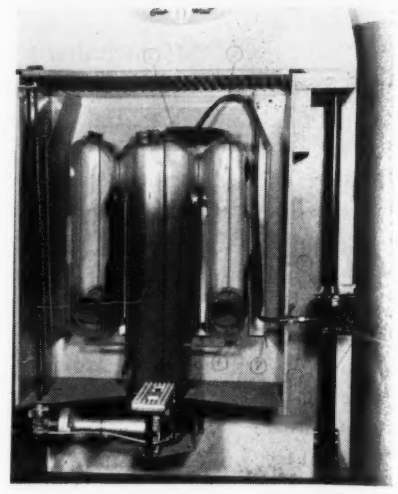
The new case, called the model 72F or 96F, is made in 6-ft. or 8-ft. lengths. In either length, height is 39 in. and width 27 in.

The 72F has two sliding doors, has a ⅓-hp. compressor, and holds about 525 packages of frozen foods. The 96F has three doors, a ½-hp. compressor, and a capacity of about 775 packages.

The case is available for both self-contained and remote operation. It has oversize freezer plates in both front and rear. The rustproof interior is equipped with adjustable steel dividers and is illuminated by fluorescent lights.

The exterior is covered with a baked-on white enamel. Four inches of Fogel-Armstrong insulation is used. The cabinet is constructed of welded steel.

## Little Servicing Needed On Hot-Spray Humidifier



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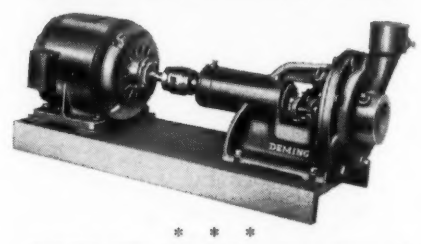
PUEBLO, Colo.—A new humidifier, which has been designed to be installed on any type of heating unit is being marketed by Merchandising Associates here. Known as the Hot-Spray, the unit can be installed in approximately an hour, according to the company.

It is claimed that Hot-Spray's all copper and brass construction eliminates corrosion and rust to the point that some test units have run for 10 years without need of repair.

The amount of vapor reaching the hot air stream is said to depend on the proximity of the expansion chamber to the heat source.

Suited for use with coal, gas, oil, and gasoline burning units the Hot-Spray will retail for $15.00, less saddle valve and ¼-in. copper tube water supply line, the company said.

## Roth Co. Introduces New Liquid Circulating Pump



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ROCK ISLAND, Ill.—For domestic and industrial pumping applications requiring pressures up to 175 lb., speeds to 3,600 r.p.m., capacities to 150 g.p.m., and viscosities to 550 s.s.u., an improved turbine type pump has been introduced by the Roy E. Roth Co. here.

Liquids of extreme temperature variations can be handled without stalling the pump through use of an automatic, self-adjusting impeller, it is claimed; and very hot liquids can be pumped without vapor-binding.

Both heads and impeller, available in either bronze or stainless steel, are renewable in case of wear or whenever the capacity of the pump is to be changed, the company states.

The pump is available in various sizes and capacities, with or without motor, base, and coupling.

# What's New (Con't)

* * *

## Slide Opening Aids User To Reach In Buxtonette

LOS ANGELES—Newest addition to the line of refrigerators manufactured by Buxton, Inc., here is an all-purpose model of more than 4-cu. ft. net capacity and measuring 24 in. wide, 28 in. deep, and 39 in. high.

The table-top refrigerator, called the Buxtonette, is being produced in a style described as "novel" for a box of this type.

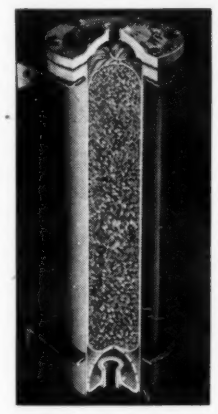
One of the features of the midget refrigerator is the "Slideaway" door, standard equipment on other Buxton models. The door slides under the top to open the refrigerator, thus enabling the user to reach the interior without stooping, according to Buxton.

Other announced features are the rounded corners of the liner, a stainless steel evaporator with ice cube trays, well-type construction to hold in refrigerated air, and a recessed base all around.

The unit is recommended for restaurants, bars, offices, social rooms, apartments, theaters, lunch rooms, and similar places.

## Water Filter Absorbs Some Hydrogen Sulfide

CHICAGO—Production of a new compact, self-contained water filter of a renewable cartridge type is announced by Magneswitch, Inc. here, manufacturer of automatic liquid control and processing equipment.



Designed primarily to meet the need for water conditioning at point of use on beverage fountains, coffee urns, individual water fountains, and domestic water taps, the Magneswitch filter also has application on drink carbonators and syrup mixing units where the taste of chlorine or unpalatable impurities is objectionable.

The basic model of the filter is made up of a specially prepared mineral cartridge measuring approximately 3-in. dia. x 13 in. and housed in a cylinder of similar dimensions. A bolted end cap is provided for access to the filter cartridge. One-fourth inch in and out pipe connections are located at top and bottom.

The mineral filtering element is claimed to be effective in absorbing sundry tastes and odors present in solution but not chemically combined with the water. This includes chlorine used for sterilizing water and, to a degree, hydrogen sulfide present in certain natural waters. For beverage uses the action of the filter clarifies water to give it what is known as "polish" or "sparkle."

In normal service, the filter has a conservative capacity rating of 2,500 gallons. Capacity at any particular installation depends to some extent on the turbidity of the water, since free solids removed tend to fill up and reduce the mineral surface available for absorbing tastes and odors.

## 'Hoover, Jr.' Designed For Small Home Market

CLEVELAND—"Hoover Junior," a new lightweight upright vacuum cleaner, weighing only 13½ lbs., has been introduced recently by the Hoover Co. here.

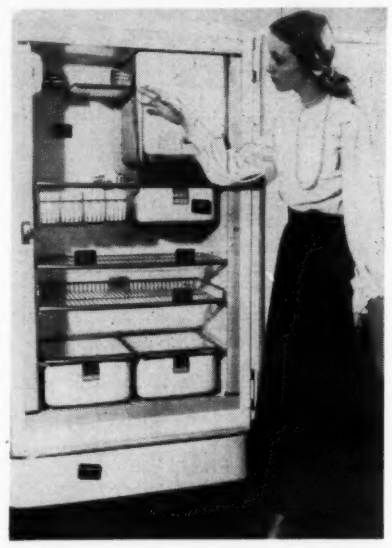
In announcing the new model, to be available early in November, Frank G. Hoover, vice president, pointed out that it is expected to be a factor in reaching the small apartment and pre-fabricated house dweller.

The Hoover Junior will retail for $59.95 without tools, or $69.95 with cleaning tools, it was announced.

## Magnetic Display Clip Adheres to Appliances

NEW YORK CITY—"Maggie," a new magnetic display clip for holding price, identification, or feature cards on the surface of appliances, automobiles, cans, and any other steel product, has recently been introduced by Magnetic Merchandising, Inc. here.

The magnet, which is said to be permanent, will hold to any steel surface, even though it has been covered with enamel, paint, or paper labels. The clip may be used with any other material by sticking a steel slug or small washer on the item with glue or rubber cement, the manufacturer points out.



Magnetic Merchandising display clip.

One clip will hold up to a 5 x 8-in. card. Two or more Maggies may be used with larger cards. It is said that the cards are held with an appearance of third dimension, which attracts attention.

Also recommended for holding cards on supply bins and filing cabinets, Maggies come in two types—blue ones for perpendicular or upright mounting and white ones for parallel mountings.

Packed 20 whites and four blues to a box, Maggies retail for $3.95 per box.

Patented Alinco Material is used for the magnet and the clips are made of stainless spring steel, according to the manufacturer. Each box is equipped with a steel plate in the bottom for use in storing of the clips.

## Glass Panel Heater Developed In Maginot Line

NEW YORK CITY—Radiant glass heating panels that warm objects in a room primarily and the air secondarily are being introduced here by the Continental Radiant Glass Heat Corp.

Manufactured by the Blue Ridge Glass Co. of Kingsport, Tenn., these new electrically operated panels are said to heat with 100% efficiency without dehydrating the air and with no fumes, soot, or dust.

The idea of radiant glass heat, according to its sponsors, originated with the St. Gobain glass makers of Paris, France, and was developed specifically for use in the Maginot Line underground fortifications. The St. Gobain experts had devised an aluminum element which when fused into tempered glass by a secret process, gave off a heat that was radiant.

Continental officials stated that radiant glass heating has been used successfully in various sections of the United States since 1942 in homes and commercial establishments. Panels have been tested and approved by Electrical Testing Laboratories here, Underwriters' Laboratories, and the New York City Board of Water Supply, Gas, and Electricity, they said.

The panels measure 16 by 24 in. and can be screwed onto a wall, preferably below a window. They draw 9 amperes on 110 volt current and 4.5 amperes on 220 volt current. They have a total capacity of 1,000 watts.

Both amperage and wattage reduces 25% when the plate reaches surface temperature of approximately 300° F.

A single panel is said to be sufficient to heat a room of 1,400 cu. ft. or less. Each of these radiant glass panels can be regulated by a thermostatic control by either room temperature or surface temperature of the glass.

Radiant glass heat panels can be installed by any electrician, Continental Radiant Glass Heat Corp. officials said.

The KEY to AIR CONDITIONING

*One of a series from*

*by James J. LaSalvia*

Readers who have any questions regarding the application of air conditioning are invited to write to Mr. LaSalvia, the author of this series, who will be pleased to furnish a complete and detailed answer free of charge. This is another of the services provided by the NEWS.

## Selection of Water Cooling Coils (Cont.)

**STEP NO. 8**

Determine the "K" factor. (B.t.u. per sq. ft. of face area per degree F. MED per row per hour.) This factor is for sensible heat only.

First select coil having face area as close as possible as figured under Step 6; namely, 17.2 sq. ft.

Referring to Chart 5, we can use 24 tubes in face, with a nominal tube length of 6½ ft., and having a face area of 17.9 sq. ft. which is the closest.

This is one coil with two complete refrigerant circuits.

Check velocity through the coil.

$$\frac{8{,}600 \text{ c.f.m.}}{17.9 \text{ sq. ft.}} = 480 \text{ f.p.m. actual velocity.}$$

Now referring to Chart 1, the 24-tube face with 28 g.p.m. as determined in step No. 5 shows that the water velocity through the tubes of the coil is 1.5 ft. per second.

Now referring to Chart 2, and using the velocity of 480 f.p.m. and the water velocity of 1.5 f.p.s., the "K" factor is 140 B.t.u.

Therefore, the "K" factor in this case is 140 B.t.u.

**STEP NO. 9**

Determine the rows deep.

The rows deep of the coil is determined by the following formula:

$$\frac{\text{B.t.u./hour sensible heat}}{\text{"K" factor x sq. ft. face area x degrees MED}} = \text{Rows of tubes deep.}$$

$$\frac{84{,}584 \text{ B.t.u./hour}}{140 \times 17.9 \times 13} = 2.6 \text{ rows deep.}$$

In this case a three-row coil should be used.

Therefore, the water coil to use is the No. 83 c.t. three rows deep as shown on Chart 5, having 24 tubes high in the face. This coil has 17.5 sq. ft. of face area and has over-all dimensions of 37 7/16 in. high and 7 ft. 2½ in. long, with 6½ ft. nominal tube length.

The air friction through the coil in shown on Chart 4, and is in this case .2 in. of water.

The water head loss through the coil is shown in Table 2, and is in this case 1.64 ft.

**POINTS TO BE CONSIDERED**

In selecting rows deep for pre-cooling coils it is good practice to balance compressor capacity with water capacity in order to have a balanced system so that the cost of operation may be held as efficiently as possible.

If the calculations in Step No. 9 came out 2.6 to 3.1 rows, a three-row coil can be used without further calculations. But if the calculations came out 2.2 to 2.5 rows, it would be necessary to recalculate closer to two or three rows.

This can be accomplished by varying certain assumptions to increase or decrease the rows deep. To increase, the following may be applied:

1. By decreasing the water flow through the coil.
2. By decreasing the water temperature rise through the coil.
3. By using coil with a smaller face area.

In order to decrease the number of rows deep, the above factors should be increased.

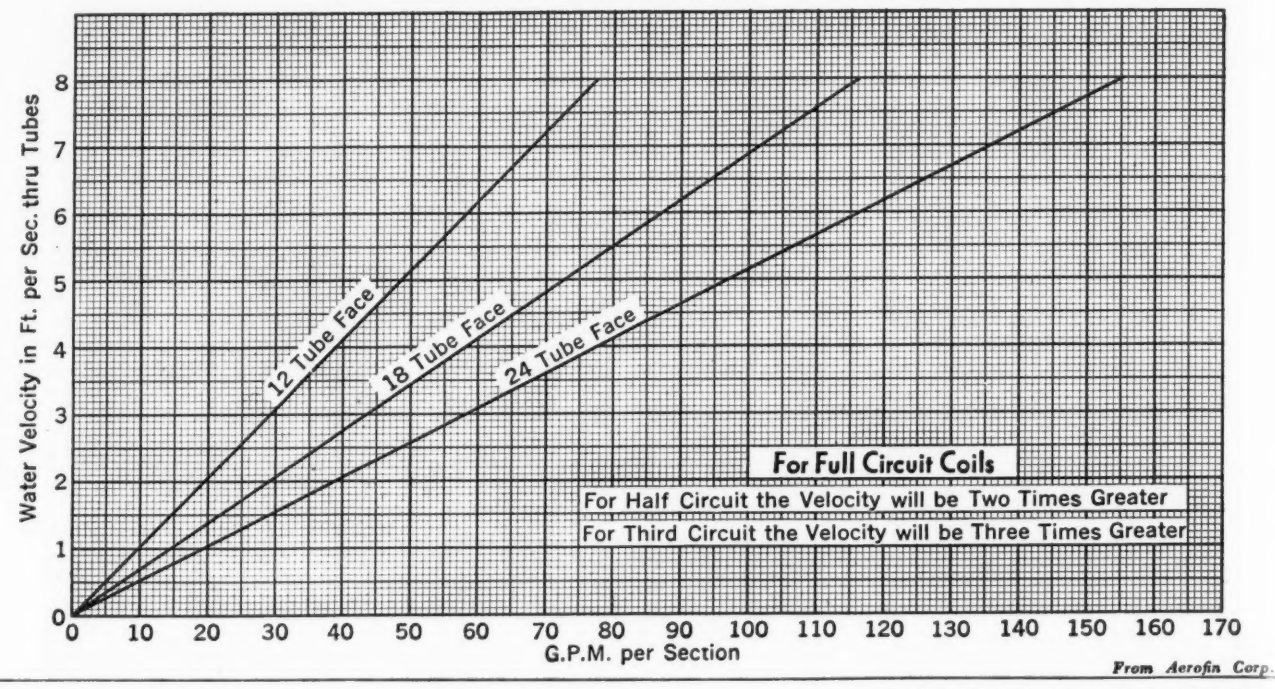
Pre-cooling water coils as low as two rows deep may be used, but the amount of cooling derived from a two-row is so small that it may not warrant in using it. It is recommended that in general no less than three-rows deep should be used.

**STEP NO. 10**

Temperature of air mixture leaving

*(Continued on next page)*

**Chart 1**

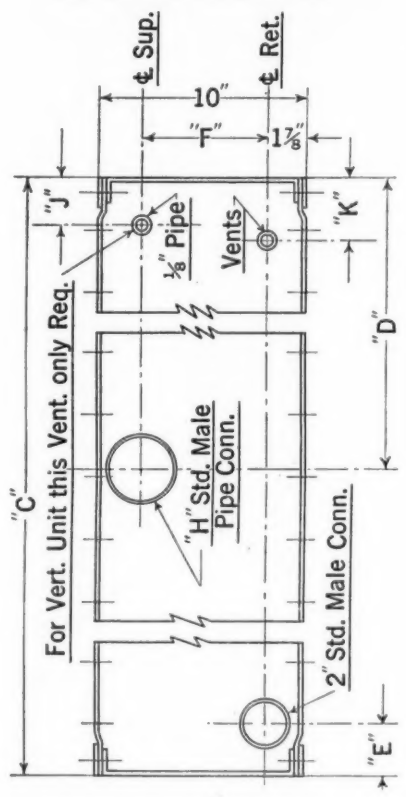


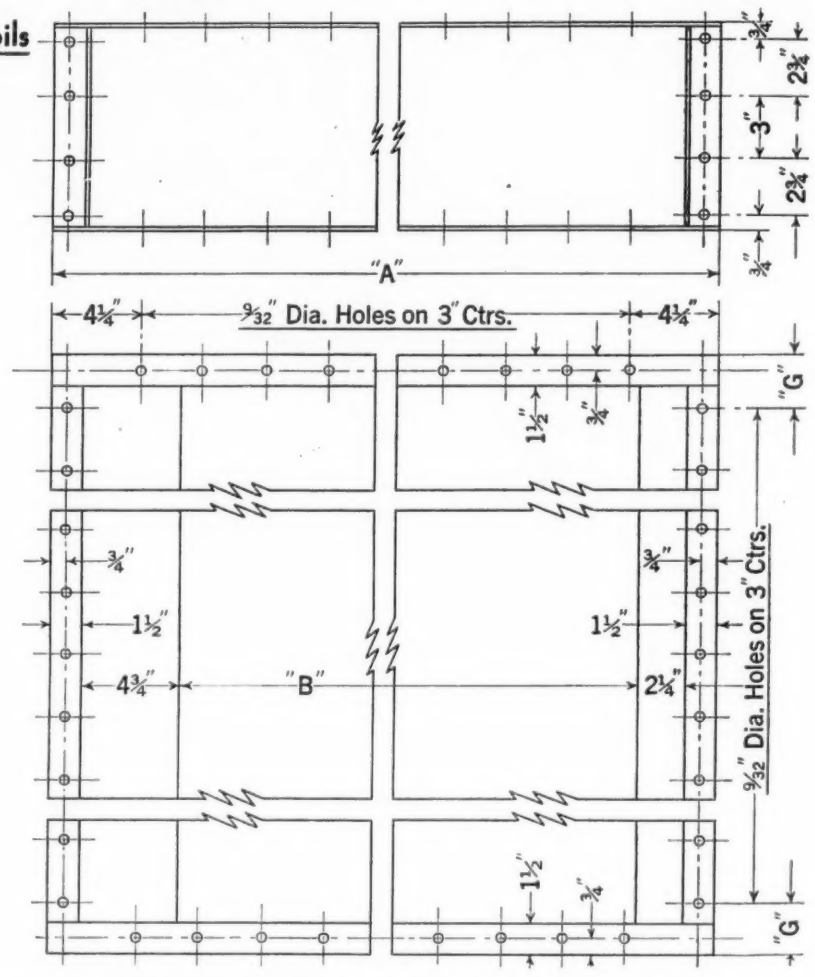

*From Aerofin Corp.*

**Chart 5**

**Physical Data For C.T. Water Coils**

Inlet & Outlet Located for L.H. Hor. & Vert.—R.H. Hor. located opposite—full Circuit only




| Tube Face | "C" | "D" | "E" | "G" | "H" | "J" | "K" | Rows Deep | "F" |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 20 9/16" | 9 15/16" | 2 7/16" | 4 9/32" | 2" | 2 3/32" | 2 31/32" | 2 | 2 5/16" |
| 16 | 29" | 14 3/16" | 2½" | 2½" | 2" | 2 11/32" | 3 1/32" | 3 & 4 | 3 5/8" |
| 24 | 37 7/16" | 18 3/8" | 2 9/16" | 3 21/32" | 3" | 2 3/8" | 3 1/16" | 5 & 6 | 6" |

| Unit Size | 2'0" | 2'6" | 3'0" | 3'6" | 4'0" | 4'6" | 5'0" | 5'6" | 6'0" | 6'6" | 7'0" | 7'6" | 8'0" | 8'6" | 9'0" | 9'6" | 10'0" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| "A" | 2' 8½" | 3' 2½" | 3' 8½" | 4' 2½" | 4' 8½" | 5' 2½" | 5' 8½" | 6' 2½" | 6' 8½" | 7' 2½" | 7' 8½" | 8' 2½" | 8' 8½" | 9' 2½" | 9' 8½" | 10' 2½" | 10' 8½" |
| "B" | 22½" | 28½" | 34½" | 40½" | 46½" | 52½" | 58½" | 64½" | 70½" | 76½" | 82½" | 88½" | 94½" | 100½" | 106½" | 112½" | 118½" |

**FACE AREAS (Sq. Ft.) FOR C. T. WATER COILS**

| Overall Height | Tubes in Face | NOMINAL TUBE LENGTH 2' 0" | 2' 6" | 3' 0" | 3' 6" | 4' 0" | 4' 6" | 5' 0" | 5' 6" | 6' 0" | 6' 6" | 7' 0" | 7' 6" | 8' 0" | 8' 6" | 9' 0" | 9' 6" | 10' 0" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 9/16 | 12 | 2.63 | 3.33 | 4.03 | 4.73 | 5.44 | 6.14 | 6.84 | 7.54 | 8.24 | 8.94 | 9.65 | 10.35 | 11.05 | 11.75 | 12.45 | 13.16 | 13.85 |
| 29 | 18 | 3.95 | 5.00 | 6.05 | 7.10 | 8.15 | 9.20 | 10.27 | 11.31 | 12.38 | 13.42 | 14.48 | 15.54 | 16.60 | 17.65 | 18.70 | 19.74 | 20.80 |
| 37 7/16 | 24 | 5.26 | 6.66 | 8.08 | 9.48 | 10.88 | 12.30 | 13.70 | 15.10 | 16.50 | 17.90 | 19.30 | 20.70 | 22.10 | 23.50 | 24.90 | 26.30 | 27.74 |

*Total Sq. Ft. Surface = Face Area × 15.95 × No. of Rows Deep.*
*NOTE: All dimensions approximate. Certified drawings upon request.*

*From Aerofin Corp.*

## Table 2—Water Head Loss per Section

**Full Circuit (Every Tube Out of Header)**
**(Feet Water)**

For Half Circuit—Every other tube out of header use 1.85 times table head loss
For Third Circuit—Every third tube out of header use 2.7 times table head loss

**#82 C. T.—2-Row**
**Water Velocity Feet per Second**

| Length | .5 | 1. | 1.5 | 2. | 2.5 | 3. | 3.5 | 4. | 5. | 6. | 7. | 8. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2'0" | .12 | .32 | .57 | .86 | 1.20 | 1.56 | 1.96 | 2.40 | 3.28 | 4.30 | 5.35 | 6.50 |
| 3'0" | .14 | .36 | .66 | .97 | 1.38 | 1.78 | 2.26 | 2.75 | 3.78 | 4.94 | 6.13 | 7.54 |
| 4'0" | .15 | .41 | .75 | 1.10 | 1.56 | 2.03 | 2.55 | 3.11 | 4.30 | 5.56 | 6.90 | 8.58 |
| 5'0" | .17 | .45 | .82 | 1.21 | 1.74 | 2.26 | 2.85 | 3.45 | 4.78 | 6.24 | 7.80 | 9.62 |
| 6'0" | .19 | .50 | .90 | 1.34 | 1.92 | 2.50 | 3.14 | 3.80 | 5.28 | 6.90 | 8.63 | 10.66 |
| 7'0" | .20 | .55 | .99 | 1.49 | 2.10 | 2.75 | 3.44 | 4.17 | 5.80 | 7.60 | 9.50 | 11.72 |
| 8'0" | .22 | .58 | 1.06 | 1.58 | 2.28 | 2.98 | 3.73 | 4.50 | 6.28 | 8.20 | 10.30 | 12.73 |
| 9'0" | .24 | .63 | 1.15 | 1.70 | 2.45 | 3.22 | 4.03 | 4.86 | 6.77 | 8.85 | 11.13 | 13.78 |
| 10'0" | .25 | .68 | 1.25 | 1.79 | 2.62 | 3.44 | 4.30 | 5.23 | 7.25 | 9.50 | 12.00 | 14.82 |

**#83 C. T. and #84 C. T.—3 and 4-Row**
**Water Velocity Feet per Second**

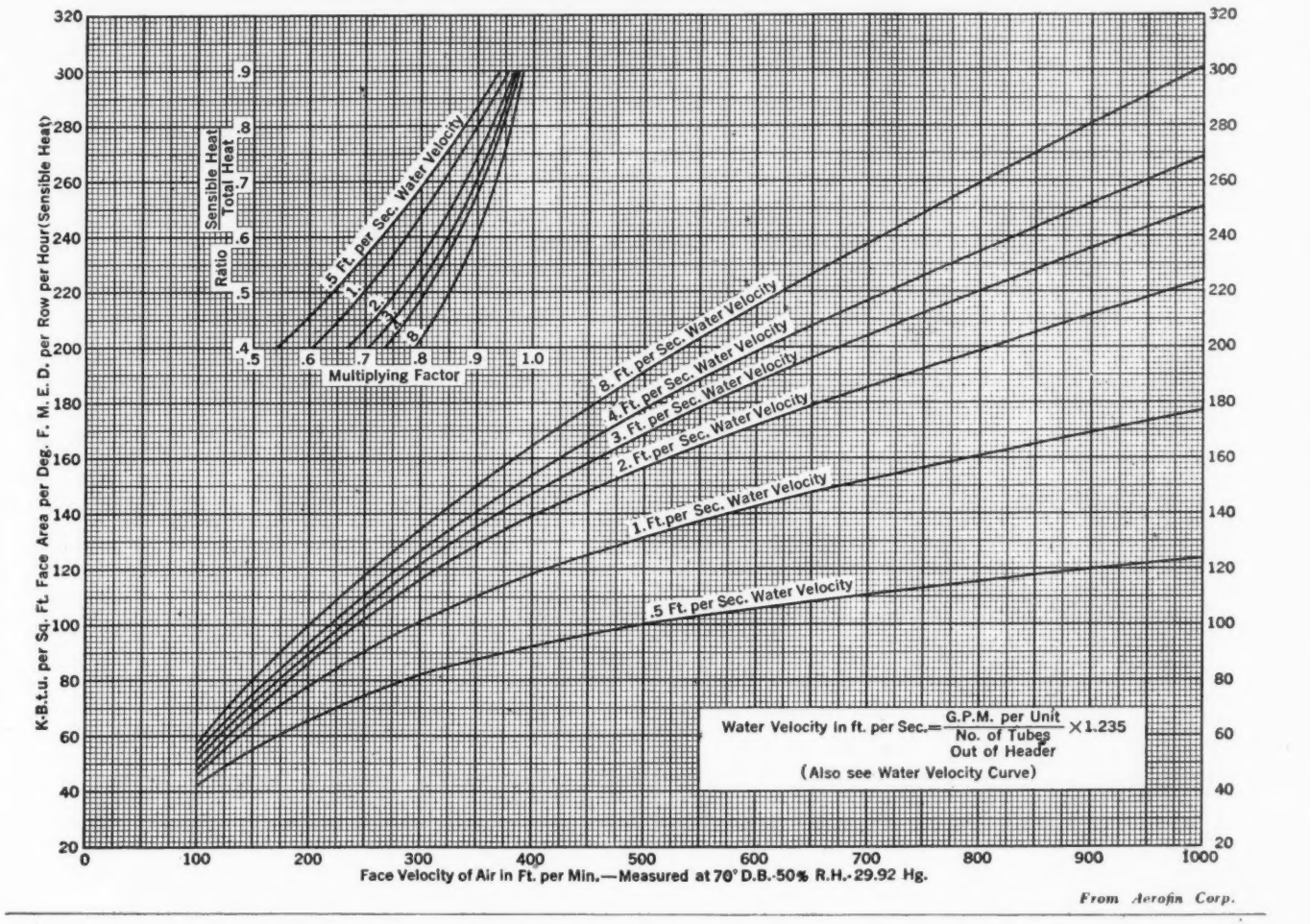
| Length | .5 | 1. | 1.5 | 2. | 2.5 | 3. | 3.5 | 4. | 5. | 6. | 7. | 8. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2'0" | .19 | .51 | .92 | 1.39 | 1.97 | 2.57 | 3.22 | 3.99 | 5.44 | 7.10 | 8.90 | 10.98 |
| 3'0" | .22 | .60 | 1.08 | 1.60 | 2.30 | 3.00 | 3.80 | 4.70 | 6.45 | 8.45 | 10.60 | 13.00 |
| 4'0" | .26 | .69 | 1.25 | 1.86 | 2.67 | 3.48 | 4.36 | 5.40 | 7.40 | 9.70 | 12.20 | 15.12 |
| 5'0" | .28 | .79 | 1.40 | 2.05 | 3.00 | 3.90 | 4.95 | 6.10 | 8.45 | 11.10 | 13.90 | 17.20 |
| 6'0" | .30 | .88 | 1.55 | 2.30 | 3.30 | 4.36 | 5.53 | 6.80 | 9.45 | 12.40 | 15.50 | 19.25 |
| 7'0" | .34 | .98 | 1.72 | 2.55 | 3.70 | 4.80 | 6.10 | 7.52 | 10.50 | 13.80 | 17.30 | 21.38 |
| 8'0" | .37 | 1.07 | 1.88 | 2.75 | 4.00 | 5.30 | 6.70 | 8.20 | 11.45 | 15.05 | 18.80 | 23.40 |
| 9'0" | .41 | 1.14 | 2.02 | 3.00 | 4.35 | 5.73 | 7.30 | 8.90 | 12.45 | 16.35 | 20.50 | 25.50 |
| 10'0" | .45 | 1.21 | 2.20 | 3.25 | 4.70 | 6.20 | 7.80 | 9.66 | 13.40 | 17.50 | 22.00 | 27.62 |

**#85 C. T. and #86 C. T.—5 and 6-Row**
**Water Velocity Feet per Second**

| Length | .5 | 1. | 1.5 | 2. | 2.5 | 3. | 3.5 | 4. | 5. | 6. | 7. | 8. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2'0" | .27 | .72 | 1.32 | 1.93 | 2.79 | 3.63 | 4.53 | 5.57 | 7.70 | 10.10 | 12.60 | 15.47 |
| 3'0" | .31 | .86 | 1.52 | 2.27 | 3.28 | 4.30 | 5.40 | 6.62 | 9.10 | 12.07 | 15.05 | 18.60 |
| 4'0" | .36 | .97 | 1.78 | 2.62 | 3.80 | 4.95 | 6.25 | 7.70 | 10.60 | 14.00 | 17.50 | 21.72 |
| 5'0" | .40 | 1.09 | 2.00 | 2.97 | 4.30 | 5.68 | 7.10 | 8.73 | 12.13 | 16.03 | 21.50 | 24.80 |
| 6'0" | .45 | 1.22 | 2.27 | 3.30 | 4.86 | 6.30 | 8.00 | 9.80 | 13.67 | 18.00 | 22.70 | 28.00 |
| 7'0" | .51 | 1.35 | 2.48 | 3.67 | 5.34 | 7.00 | 8.80 | 10.89 | 15.10 | 20.00 | 25.20 | 31.12 |
| 8'0" | .54 | 1.47 | 2.72 | 4.00 | 5.88 | 7.70 | 9.80 | 11.94 | 16.70 | 22.00 | 27.80 | 34.20 |
| 9'0" | .58 | 1.60 | 2.98 | 4.33 | 6.40 | 8.40 | 10.65 | 13.00 | 18.20 | 24.00 | 30.40 | 37.30 |
| 10'0" | .65 | 1.76 | 3.25 | 4.71 | 6.95 | 9.10 | 11.60 | 14.07 | 19.80 | 26.00 | 33.00 | 40.42 |

*From Aerofin Corp.*

## Chart 2




*From Aerofin Corp.*

amount of condensing water required is 1,350 gals. per hour at 70° F.

As the amount of water used in the pre-cooling coils is 28 g.p.m. and per hour is 28 x 60 or 1,680 gallons, which will be ample to meet the requirements of the compressor for 1,350 g.p.h. If water used in pre-cooling coils is not sufficient to meet the compressor reqiurements, it may be necessary to increase water through pre-cooling coils. This point should be kept in mind in deciding water requirements in Step No. 5.

*(To Be Continued)*

# *Selecting Water Coils--*

*(Continued from preceding page)*

water pre-cooling coils and entering direct expansion coils:

From Step No. 4 74.0° F. d.b. temp.
From Step No. 2 61.0° F. d.p. temp.
From psychrometric 65.5° F. w.b. temp.

The d.p. temperature in Step No. 2, has not changed, because no latent heat extraction has been accomplished so far. Thus, the d.p. remains the same.

* * *

**STEP NO. 11**

Determine temperature of air which must leave the direct expansion coils.

For d.b. temperature (sensible heat):

$$\text{Room temp. d.b. (Design)} - \frac{\text{(F) from heat gain} \times .925}{\text{c.f.m. through coil}} = \text{d.b. temp. of air which must leave coils.}$$

For d.p. temperature (latent heat):

$$\text{Room grains per pound (Design)} - \frac{\text{(I) from heat gain} \times 1.44}{\text{c.f.m. through coil}} = \text{Grs./lb. which the air must leave the coils.}$$

Refer grains per pound to psychrometric chart to get d.p. temperature.

$$80° \text{ F.} - \frac{188{,}504 \text{ B.t.u./hour} \times .925}{8{,}600 \text{ c.f.m.}} = 59.8° \text{ F. d.b. temperature.}$$

$$77.3 \text{ grs./lb.} - \frac{33{,}840 \text{ B.t.u./hour} \times 1.44}{8{,}600 \text{ c.f.m.}} = 71.6 \text{ grs./lb.}$$

* * *

Refer 71.6 grs./lb. to psychrometric chart, the d.p. temperature is 57.9° F.

Referring 59.8° d.b. and 57.9° d.p. temperatures to psychrometric chart, and the w.b. temperature is 58.8°.

Therefore the temperature of the air, which must leave the direct expansion coils is:

D.B. temperature ..... 59.8° F.
W.B. temperature ..... 58.8° F.
D.P. temperature ..... 57.9° F.

**STEP NO. 12**

Determine size of compressor.

From Step No. 3, the compressor load is 187,800 B.t.u./hour.

The water to be used for condensing purposes would be in this case 68° F. This is the same water which has left the pre-cooling coils, and can be used for this purpose to good advantage.

This is the proper time to select compressor for load requirements. It has been found in practice that it is better to select compressor ahead of coils to balance compressor with coils more closely.

Referring to an earlier chart on compressor capacities, we find that the compressor to use will have the following rating:

187,800 B.t.u./hour, operating at 35° F. refrigerant temperature or 32.6 lb. suction pressure, requiring 13.2 kw. per hour, and using a 15-hp. motor. The condensing pressure will be 115 lbs. per sq. in. and the

# How To Service Room Air Conditioners (7)
# Checking and Servicing Air Handling System

The following is the seventh instalment of a series which offers general service data on room air conditioners. It continues the phase introduced last week—service problems involving the air handling function—and shows air-flow diagrams for various conditions of air flow. The material was prepared from data supplied by Philco Corp.

### AIR-DIRECTION CONTROL

Where the cooled air leaves the air conditioner, adjustable or fixed louvered grilles for room air distribution and air-direction control are provided in the design of the unit. Several types of outlet grilles are used to accomplish this purpose.

The new Philco models of the "C," "CA" series make use of two, square, adjustable louvered grilles, as shown in Fig. 9. These grilles permit room air distribution by deflecting the conditioned air in various directions.

By lifting and rotating each grille to one of the four positions, air direction can be controlled to meet the user's requirements. A total of 16 possible combinations can be obtained with this type of conditioned-air direction-control grille.

### AIR FILTER

The function of the air filter is to remove foreign matter such as dirt, soot, pollen, and other solid impurities from the air passing through it. Bacteria, dust, and pollen removal is especially appreciated by those who suffer from hay fever and other forms of nasal irritation. Most single room air conditioners use a filter of the expanded paper-wafer type impregnated with a viscous material to aid in removing and retaining dust from the circulated room air. These filters are efficient, economical, and simple to replace.

Clogged or dirty filters not only cannot do the job for which they were designed, but also impair the operating efficiency of the cooling system by restricting the flow of the evaporator air stream.

For this reason, the importance of replacing filters before they become clogged cannot be too greatly stressed. A filter that offers minimum restriction to the passage of air is as important to an air conditioner as the proper functioning of its refrigerating unit.

### AIRFLOW SYSTEM CHECKS

The proper operation of the airflow system in a single room air conditioner depends primarily upon an unrestricted passage of air through the conditioner, and upon the proper functioning of the motors and fans.

When checking the airflow system the following checks should be made.

1. Inspect the dampers and other air controls to see that they operate freely, and open and close properly.
2. Inspect the filter; if it is dirty enough to restrict airflow, replace it.
3. Check all other parts of the system, such as grilles, louvers, and ducts for any foreign material that may form an air block.
4. Check the evaporator for dust and lint imbedded between the tubes and fins. Any foreign material should be removed, preferably by blowing it out with compressed air.
5. When servicing the condenser of an air-cooled model, follow the procedure outlined under 4.

### CONDENSATE DISPOSAL

In air conditioners where disposal of the condensate is accomplished by vaporizing and blowing it out through the condenser, the slot in the bottom of the condenser air scroll must be inspected. This slot may become clogged by dust and dirt from the outside air, thereby preventing the condensate from draining by gravity to the sump directly under the condenser fan.

Where this undesirable condition exists, condensate cannot be vaporized and discharged to the outside air through the condenser, but will accumulate in the pan and may overflow into the room and result in damage to floors or rugs.

With the proper window model installation, overflow should be to the outside of the building. Should the overflow take place inside the room, check first for proper cradle installation, and then for a clogged slot in the bottom of the condenser air scroll.

In the air-cooled console models, the condensate drains through a section of rubber hose from the copper tube extension of the drip pan under the evaporator to the unit bottom pan. If the bottom pan overflows, first check the rubber tube for possible kinks that might restrict the flow of condensate, and then check the slot in the bottom of the condenser air scroll.

### AIRFLOW DIAGRAMS FOR AIR-COOLED MODELS

The accompanying airflow diagrams of a typical single room air conditioner indicate airflow circuits for six methods of operation. In addition to cooling, these diagrams represent air conditioner units having provision for fresh air intake and room air exhaust.

### MAXIMUM COOLING OF ROOM AIR

For maximum cooling of air in the room, both of the primary air circuits are used. Air from the outside is drawn in and utilized to carry the heat from the motor, compressor, and condenser, and the condensate from the evaporator (in vaporized form) to the outside of the building. See Fig. 10.

Room air is drawn through the filter and evaporator, and is then forced back into the room through the conditioned air outlets. This operation produces the greatest cooling effect because no warm outside air is brought in, nor is any cooled room air exhausted.

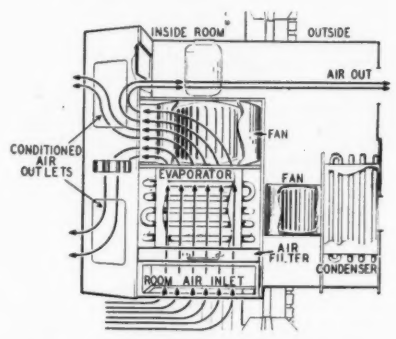



**Fig. 10—Maximum cooling of room air.**

### VENTILATION WHILE COOLING

In order to maintain the room air in good condition, a certain amount of ventilation is usually necessary. Ventilation, in this case, means mixing a certain amount of outside air with the room air.

In this method of operation, both primary air circuits are used, but in addition, a damper is opened to allow the desired amount of outside air to mix with the room air. As shown in Fig. 11, the outside air is filtered and cooled after it is mixed with the room air.


**Fig. 11—Ventilation while cooling.**

### VENTILATION WITHOUT COOLING

This diagram shows the air circuits through a typical single room air conditioner when it is used for ventilation only. See Fig. 12. Under these operating conditions, only one primary air circuit is used, because the refrigerating air and condenser air fan are inoperative.

A damper arrangement admits a certain amount of outside air and mixes it with the room air. Any desired percentage of air from the outside enters the room, depending on the position of the damper control.

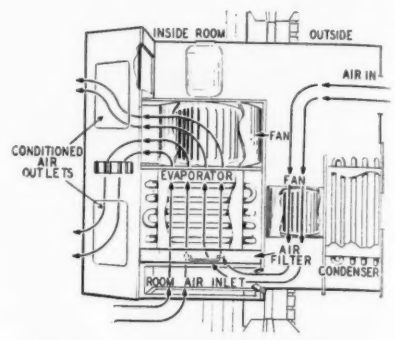



**Fig. 12—Ventilation without cooling.**

### ROOM AIR PUMP OUT WHILE COOLING

For units equipped with this feature, and with air paths adjusted as shown in the illustration, smoke, and other disagreeable odors may be removed from the room while the cooling equipment is in operation. In this case a certain percentage of the room air is pumped to the outside with the condensing air stream, as shown in Fig. 13.

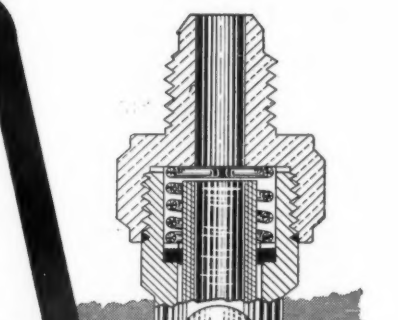



**Fig. 13—Room air pump-out while cooling.**

### ROOM AIR PUMP OUT WITHOUT COOLING

For units equipped with this feature, and when the air conditioner is operating with the controls set for ventilation only, it is possible to exhaust a desired percentage of room air to the outside, as shown in Fig. 14. Room air pump out is used only

*(Concluded on next page)*

## *Fig. 9—Louvered Grilles Control Air Distribution*

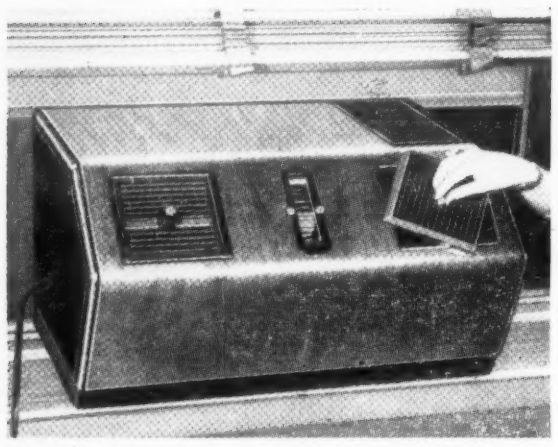


**Fig. 9 shows one of the two adjustable louvered grilles on a Philco window air conditioner being changed by the user to achieve desired air distribution.**

## Air Handling System--

*(Concluded from preceding page)*

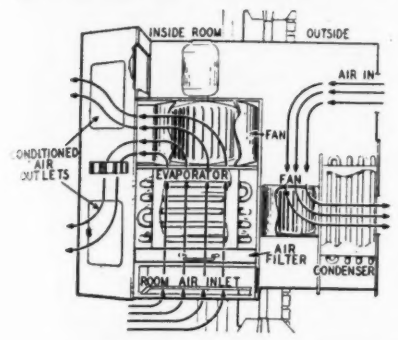



**Fig. 14—Partial room air pump-out without cooling.**

to clear the room of stale air or disagreeable odors.

There are times when it is desired to exhaust the air from the room

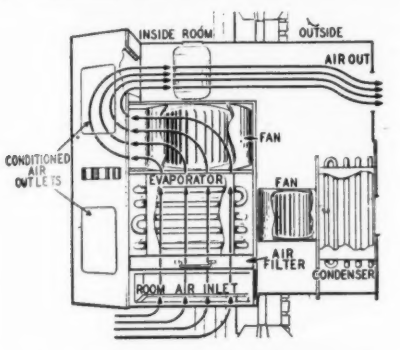



**Fig. 15—Total room air pump-out without cooling.**

more rapidly. Fig. 15 illustrates the air paths to exhaust all of the room air drawn into the conditioner to the outside of the building.

### WATER-COOLED MODELS

The diagram in Fig. 16 shows the airflow circuits for a typical, water cooled, single room air conditioner operating normally without access to outside air.

In this case, two airflow circuits are used; one to cool, filter, and dehumidify the room air, and the other to cool the motor compressor compartment. The latter is accomplished by circulating the air between the

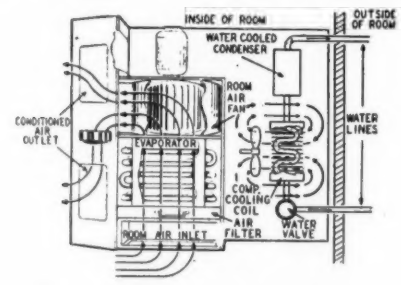



**Fig. 16—Water-cooled system.**

loops of a water-tube coil where the heat generated by the motors and compressor is absorbed from the air by the cold water in the coil.

If both the room air fan and the refrigerating unit are operating, the room air will be circulated, filtered, cooled, and dehumidified. If only the room air fan is operating, the room air will be filtered and circulated.

## Conditioner Firm Checks Pensacola Plant Site

PENSACOLA, Fla.—J. G. Valente, New York manufacturer of air conditioning units, will investigate possible location of a plant here, Councilman J. A. Alvarez informed members of the city council.

## *New India Cold Storage Plants To Cut Down Big Food Spoilage Losses*

WASHINGTON, D. C.—More than 60 new cold storage plants for the preservation of seed potatoes and perishable foodstuffs and a number of ice manufacturing plants are likely to be constructed in India before the next hot season sets in, according to the Government of India Information Services here.

Located at about 40 centers in various parts of the country, these plants will have a total capacity of nearly 45,000 tons. Capacities of individual plants will vary from 120 to 1,200 tons.

The new plants will make it possible to preserve large quantities of perishables and to spread out their supply over the whole year, the information agency pointed out. At present, the agency said, the country has only about a dozen such plants for civilian use.

"Every year India suffers great losses on account of deterioration in the quality of perishable foodstuffs before marketing or on account of these having to be sold at uneconomical prices in glut markets," the agency's report explained.

"The loss in the case of seed potatoes, for instance, is as high as 50%. Cold storage plants, experts claim, can help to cut down this loss to something like 5%."

It was pointed out that the idea of preservation of foodstuffs through refrigeration is being popularized among growers by the Central Ministry of Agriculture, which has a special branch called the Refrigeration Development Division.

New plants are being built under the guidance of the Ministry's refrigeration development engineer, M. L. Khanna. He was assigned by the Government of India last year to study the latest methods in food preservation in the United States and Britain.

The largest number of cold storage plants will be set up in the United Provinces. The remaining plants will be spread over Delhi, West Bengal, Bihar, Bombay, the Central Provinces, East Punjab, Madras, Orissa, Gwalior, Rampur, and Travancore.

There will be more than 40 plants for the storage of seed potatoes, with a total capacity of about 35,000 tons, and more than 10 multi-purpose plants with a total capacity of around 10,000 tons. Such foodstuffs as fruits, vegetables, meat, fish, milk products, and eggs will be stored in the latter plants. There will also be plants especially for fish storage.

## *Grocery Firm Buys Truck Units To Protect Food on Long Hauls*

BUFFALO — Loblaw Groceterias, Inc. has purchased from Keystone Truck Sales & Service Co. new mechanical cooling units for protection of perishable food cargoes on truck hauls through New York and Pennsylvania.

At present, a company spokesman said, 20 of the refrigeration units have been installed in the firm's trailers. The units also can be "reversed" in the winter to prevent spoilage from climatic freezing.

## Don't Let Name Deceive You

St. John's new Frost restaurant recently installed two 5-ton packaged units. One of them can be seen here in background of the soda bar-buffet area.

* * *

## Restaurant Finds Need for Year-Round System Even In Newfoundland's Predominately Chill Climate

ST. JOHNS, Newfoundland — Despite the short summer season of this important maritime metropolis, year-round air conditioning is considered a "must" in the new ultra-modern Frost restaurant here.

Two 5-ton package Chrysler Airtemp package conditioners have been installed, each equipped with steam coils for winter service. Heating coils will be supplied by an Airtemp oil-fired steam boiler.

Both units are located in the conditioned area, and employ no ductwork. They were installed by Motion Picture Supply Co., Airtemp distributor in Newfoundland.

Located in the main business section of the city, the Frost restaurant is of poured-concrete construction, and is claimed to employ the latest in cooking, lighting, plumbing, heating, and ventilating equipment.

Three distinct areas are provided—the kitchen; the food bar and buffet section with a balcony for overflow crowds, and a dining room for leisurely eating.

# Prize-Winning G-E Home Freezer Broadside Itemizes Savings, Stresses Off-Season Food

PHILADELPHIA—A home-freezer campagin devised by General Electric Co. was the best direct mail promotion of 1948 in the electrical equipment industry, in the opinion of the Direct Mail Advertising Association.

General Electric was awarded the first-place certificate at the association's 31st annual conference in the Benjamin Franklin hotel here Sept. 29.

Main guns in the campaign were seven mailing pieces sent by G-E to prospects listed by dealers. Each piece was imprinted with the name, address, and telephone number of the dealer.

(If a dealer wished, he could handle the mailing of the material himself. In this case, G-E sent the material to the dealer.)

Four of the seven mailing pieces consisted of colorful 4½ in. by 7 in. post cards. They were mailed one-a-day on four consecutive days.

Underneath an eye-catching painting on the front of each card was a question. In order, these questions were:

"Is it true that your 'dollar' can go twice as far if you buy fruits and vegetables by the basket, in season?" "Is it true that the fish and game you bag in the fall can be served for dinner on the 4th of July?" "Is it true that the pies you baked last summer can be enjoyed on New Year's Day?" "Is it true you can save up to 20 cents per pound on T-bone steaks?"

Under the heading, "Yes, It's True," copy on the reverse sides of the cards elaborated briefly on the answer.

Two days after the fourth card was mailed ,the fifth piece was sent out. This was a double card showing the rise in living costs and the savings made possible by a home freezer.

### *Living Cost Rise Cited*

On the front of this card was the query, "Is it true that food costs rose 203%?" On the inside was a graph based on government surveys which showed that this cost had indeed increased that percentage in relation to the 1935-39 base.

Below the graph were "just a few of the many examples of how you can 'stretch' your budget with a G-E home freezer." Figures were cited to prove that proper use of a freezer could result in savings of 17% on a 45-lb. lamb and 20% on a 120-lb. hind quarter of beef if purchased and frozen at one time, 60% on green beans and strawberries if bought in season, and 29% on ice cream if purchased by the gallon.

Mailing piece number six—a booklet entitled "You can't afford to be without one!"—was put in the mail two days after number five. It told the complete story of the G-E home freezer.

Opening pages of the booklet explained what a home freezr is, what it will and will not do, and—in general terms—how a G-E unit "will not only pay for itself, but will show a substantial dollars and cents saving." Then the booklet got down to specific figures:

"The average person eats one-half pound of meat a day. That's 60 pounds of meat a month for a family of four.

"A considerable savings can be made by buying a loin of pork, a whole lamb, or a quarter of beef. For maximum savings, buy spring fryers in quantity when prices are lowest. Locker plants and butchers who cater to clubs and restaurants will give savings of 10 to 20 cents a pound on such purchases.

"Ten cents a pound, and 60 pounds a month, means a saving of $6 a month for the average family."

Turning to fruits and vegetables, the booklet pointed out that a 12-ounce package of commercially frozen corn costs about 25 cents.

"But this same amount buys enough fresh corn (at the peak of the season) to make three 12-ounce packages of home frozen corn. Thus, you save two-thirds by freezing your own. This percentage can be considered an average savings on home frozen fruits and vegetables.

"Suppose a family of four spends $30 a month for fruits and vegetables (and this is being very conservative, these days). And suppose that only one-third of this amount, or $10, is for frozen fruits and vegetables. A two-thirds savings on $10 is nearly $7.

"Now, let's be still more conservative and cut this saving to $2. We can certainly assume that the savings realized by home freezing fruits and vegetables in season is $2 per month, or $24 a year."

Continuing, the booklet said that the average family of four eats seven quarts of ice cream a month.

"When ice cream is bought in small quantities it averages 70 cents a quart—$4.90 a month. When bought by the gallon it averages 50 cents a quart—$3.50 a month. Savings on ice cream a month—$1.40."

### *Savings for 10-Year Period*

Then the booklet showed exactly how much savings could be realized over a 10-year period by using a freezer (disregarding time and labor saved and savings on car, tires, gasoline, and other expenses):

Reading on, the prospect learned how a freezer will give her more nutritious, more attractive, and more delicious food. Next came the story on extra conveniences:

"A G-E home freezer, properly used, is practically a store in your own kitchen. Not just an ordinary grocery store, but a wonderful store, filled with the things you know your family, your friends, and yourself enjoy most.

"Rare delicacies are there. It is a complete bakery shop, filled with pies, cakes, homemade bread and rolls. It is a butcher shop, filled with fine steaks, tasty cuts of tender meat, hamburg patties. It is a country vegetable stand filled with the choice crops of bounteous harvest.

### *What Freezer Will Hold*

A box here pointed out that a well-filled 8-cu. ft. freezer will have an inventory something like this:

Meat—6 T-bone steaks, 1 porterhouse, 1 rib roast, 1 pork roast, 6 lbs. of hamburger, and 2 chickens. Vegetables—6 packages each of peas, beans, and corn. Fruit— 4 qts. of strawberries and 1 qt. of blueberries. Other items—1 gal. of ice cream, 2 dozen dinner rolls, 2 pies, and 2 loaves of bread.

"And still there's room left for frozen peaches, leftovers, a turkey, and many other things," it was emphasized.

Remainder of the booklet discussed mechanical details of G-E freezers.

The seventh mailing piece, sent out three days after the booklet, was a four-page fictional short story printed and illustrated in magazine style. Called "For the Love O' Pete," this cleverly gotten up promotion told what a freezer meant to the household of "Peter and Betty Bushnell."

### *Booklet Guides Dealers*

Another item of campaign material was a booklet containing 31 answers to questions frequently asked about freezing and G-E freezers. Quantities of these booklets were shipped to dealers at the start of the drive. Dealers were advised to start calling on prospects, armed with the booklet, any time after the first post card was mailed.

In addition, dealers could obtain free *House & Garden* display cards mounted with G-E home freezer advertisements.

G-E advised its dealers to support the direct-mail campaign with window displays, newspaper advertising, spot radio announcements, trained salesmen, demonstrations, and trial installations.

Regarding displays, the company stressed that dealers should be sure their interior displays were prominent, that they had plenty of descriptive literature handy, and that their freezers were stocked with frozen foods.

Operation of the campaign was described to dealers in a brochure entitled, "A plan to help you build a profitable new business in General Electric home freezers."

"Do you remember the doorbell pushing days of early refrigeration?" the brochure asked. "If you're old enough for that, you have some pretty fond memories. What a bag of tricks you had to have to sell a completely new idea to people accustomed only to an old-fashioned, messy, unsure method of storing fresh foods.

"Sure, it was tough selling a $400 untried appliance to someone who had a $50 ice box. But, in trying for the sale, you didn't sell steel against wood, or electricity against the ice man. You sold convenience, better health, new comforts . . . a higher standard of living!

"The point is, you converted the public to a new method of refrigeration . . . and you did it so well and so profitably that the refrigeration business remains the backbone of the appliance business. . . .

### *'Hey Day' of Home Freezer*

"Another one of those 'hey days' is here. The product is the home freezer, and this time the job should be relatively easy.

"The market for home freezers is a ready-made one. People are sold on electrical living, which was not the case when the standard refrigerator was being introduced. Millions of families now know from experience all about the convenience, economy, and the health-giving qualities of refrigeration.

"Another good omen is in the fact that families have been educated to want more and more refrigerated storage space. . . . Today, some two million families know about frozen foods, through experience with some ten thousand locker plants across the country.

Discussing the market, G-E pointed out that a study by a magazine showed that 34.8% of its readers planned to buy a home freezer.

"Such a large percentage . . . we know to be beyond immediate realization," the brochure continued. "We will even pare a little from the sales performance of a retailer in a Florida city in 1946, who sold more than 2% of the community's wired homes.

### *Goal: 2% of Wired Homes*

"We believe you should set your sales bogey at 2% of the wired homes in your community. . . ."

"This is a responsibility that you should take seriously, for in selling home freezers you are in competition for the consumers' dollar with travel, automobiles, food, and many other necessities and luxuries."

The best prospects, dealers were told, "will undoubtedly be families living in single and two-family dwellings. But don't take such a statement too literally.

"When you think of prospects think of people; and the people who are the best prospects are those who have large families; live on farms; like to garden, fish, hunt; or who do a great deal of entertaining. Small families, too, need a home freezer as much as large families, so that they can enjoy the same buying advantages. . . ."

## Where the Money Is Saved

| | |
|---|---|
| Savings in meat | $ 6.00 a month |
| Savings in fruits and vegetables | 2.00 a month |
| Savings in ice cream | 1.40 a month |
| **Total savings** | **$ 9.40 a month** |
| $9.40 x 12 months is | $ 112.80 a year |
| General Electric NA-8 Home Freezer (Jan. 1, 1948) | $ 329.75 |
| Amortize over 10 years | $ 32.98 a year |
| 6% interest on $329.75 (average for 10 years) | 26.08 a year |
| Operating cost 40 kwh. per month at $.03 per kwh. | 14.40 a year |
| **Cost** | **$ 73.46 a year** |
| Ten-year total cost | 734.60 |
| Food savings per year | 112.80 |
| Ten-year food savings | $1,128.00 |
| Ten-year food savings | $1,128.00 |
| Ten-year total cost | 734.60 |
| **Ten-year savings** | **$ 393.40** |

# Druggist Tells Why He Bought Cooling Equipment In 1948

FREMONT, Neb. — A new 5-ton self-contained Frigidaire air conditioning unit installed in the newly remodeled and modernized Brunner Drug Co., 541 North Main St., has been largely instrumental in increasing sales per customer about 50% during the past summer months, according to E. M. Daniel, proprietor.

Installation of a new 4-cu. ft. self-serve ice cream cabinet and a 10-cu. ft. biological refrigerator also have helped to boost business, he said.

Daniel said that he figures he will be money ahead by installing the new equipment and remodeling now rather than waiting for lower equipment, labor, and material prices.

With employment and money circulation high, and prices at a record high level for farm products, he figures that the increased sales potenial will enable him to make a greater net profit than if he should wait for lower modernization costs, when the sales potential would be down.

Furthermore, he declared, if a businessman puts off modernization until equipment and labor are materially cheaper, chances are he will not get the job done at all.

The packaged air conditioning unit has been installed near the all-glass front at the north side of the store and discharges cooled and dehumidified air across the front of the store.

A large floor-stand fan has been set up opposite the air conditioner at the south side and circulates the cooled air to the rear of the floor. This arrangement has proved very satisfactory, the proprietor stated.

It has eliminated the expense of ductwork, while the 5-ton unit has maintained the interior temperature at a comfortable 75° F. even in the prescription department and the balcony-office at the rear of the store, without working the machine to capacity on the hottest days. Vents for the heating system are used for ventilation in the summer.

The Liquid Carbonic self-service cabinet for packaged ice cream and ice cream bars is located on the main traffic aisle near the rear of the store. This case has been adding about 300 gallons of ice cream per summer month to total sales.

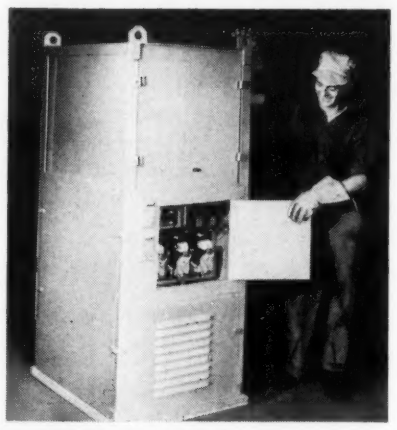
The druggist has found that a sizeable trade is being built up with youngsters who often bring their parents with them to purchase ice cream bars. The ice cream business will amount to a conservative 2,000 gallons per year, even with a sharp decline in sales during the winter, judging from volume this past summer, he said. The pharmacy does not have a soda fountain.

The 10-ft. biological refrigerator installed in the prescription department insures freshness and protects potency of biologicals, serums, and other drugs which should not be stored at room temperature, he pointed out, and has made it possible to give customers better service both in the prescription and animal health departments. More complete stocks of biologicals can be carried and this added service has been publicized by customer comment.





## Cooling for Hot Spot



**Workman standing with the new smaller size Dravo crane cab cooler for the comfort and protection of crane operators in factories or foundries, demonstrates its compactness.**

* * *

## New Crane Cab Cooler Features Compactness

PITTSBURGH—A small air conditioning unit designed to protect crane operators against the hazards of excessive heat, dust, fumes, and noxious gases in factories or foundries where aluminum, copper, lead, manganese, magnesium, paint, cement, and glass are handled or produced, has been developed by Dravo Corp. here.

The new model is about half the size of the C-5 Dravo crane cab cooler used to condition the cabs of cranes operating in extremely high temperatures such as those found near steel mill soaking pits.

Designed for operation in ambient temperatures up to 130° F., the new equipment will maintain cab temperatures at 80° to 85° in the summer, and 68° to 72° in the winter. A vertical unit, it can be mounted alongside a crane cab or placed on adjoining catwalks. Only a power supply line is needed for its installation.

Besides providing summer cooling, winter heating, and continuous ventilation, the unit removes dirt and dust, gas fumes, and odors from the air discharged into the cab. It is 5 ft. 5¾ in. high by 2 ft. 2 in. by 2 ft. 9 in.

Air is used for condensing purposes in the cooling coils and the refrigerant is "Freon-114." To provide continuous ventilation in the crane cab, approximately 300 cu. ft. per minute of return air, blended with about 100 cu. ft. per minute of makeup air, is introduced into the cooler. Filters remove dirt and dust from both return and makeup air. Activated carbon cannisters in the air stream remove fumes, gases, and irritants from the air supplied into the crane cab.

Electric strip heaters of chrome steel sheathed with monel metal fins provide for winter heating.

All internal equipment is mounted on a structural steel frame of welded construction. The 3-hp. compressor motor is supplied with positive forced ventilation by a supply of cool air from which dust, dirt, and acid fumes have been removed. The ventilating air fan motor also is in the path of the cooled air.

The unit is furnished with a summer-winter switch of the "heat-off-cool" type. Controlling thermostats are installed within the unit. Supply and return air openings are installed on top of the cooler minimizing the amount of insulated ductwork required.

The larger (C-5 model) Dravo crane cab coolers are being used by several plants to safeguard operators from extremely high temperature conditions such as those found over ingot molds and soaking pits, and around ladle cranes.

## North Carolina Licenses New Cooling Contractors

RALEIGH, N. C. — According to announcement by W. F. Morrison, executive secretary of the State Board of Examiners of Plumbing and Heating Contractors, the following have just been granted licenses to engage in the business of air conditioning contracting:

Thomas B. Carpenter, Raleigh; Arnold B. Edgerton, Goldsboro; Herbert N. Hunter, Goldsboro; U. H. Johnson, Charlotte; Donald W. McLean, Greensboro; Walter G. Smith, Wilson; and William A. Wilkinson, Jr., Rocky Mount.

## Conditioned Heat Booklet Gives Dealers Selling Aid

PITTSBURGH — A new approach to the standard selling procedure of heating equipment has been developed by Jones & Brown, Inc., national distributor of the full line of automatically fired Ko-Z-Aire conditioning units and RAC controls.

The Pittsburgh company has prepared a 12-page manual outlining the basic and fundamental requirements of modern warm air heating systems, and has just released it through its sales organization to associated dealers and distributors as an aid in showing potential customers the many advantages of conditioned heat.

The manual, entitled "Life Begins at 70°," illustrates the seven basic factors which provide full comfort and health protection in the modern well-designed heating system and to show how each contributes its share toward ultimate and complete satisfaction.

## *Jensvold Named Ad, Promotion Mgr. for Reinhard Bros. Co.*

MINNEAPOLIS — Lloyd Jensvold has been appointed advertising and sales promotion manager of the Reinhard Brothers Co., E. L. Davis, vice president and treasurer, has announced.

Jensvold was assistant merchandise manager of the Seiberling Rubber Co. of Akron, Ohio for the past three years. Prior to that time he was director of display and store planning for Gamble stores for 15 years.

# Denver 'Wet Ice' Plant Adds Equipment Enabling It To Make Solid Carbon Dioxide

DENVER—Thought to be one of the most unusual refrigeration installations in local history, a 100-hp. system has been installed by Mitchell-Trautman, Inc., here to power the new dry ice plant of Carb-Ice Corp.

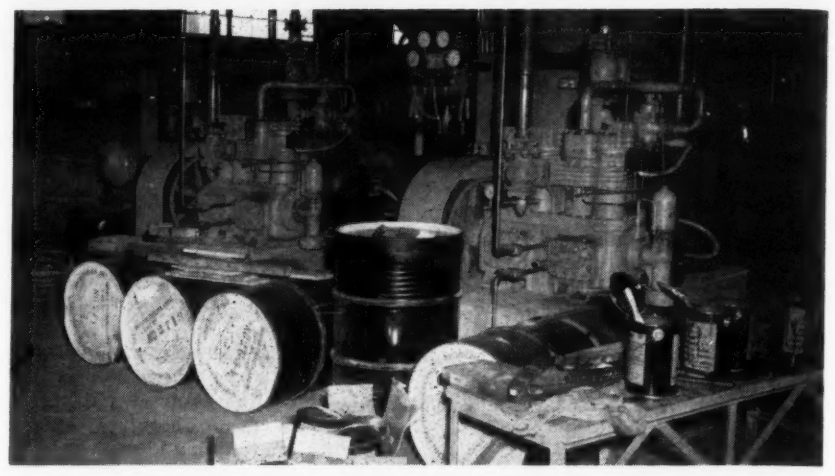
The $CO_2$ plant, headed by J. H. Lorenzen and Warner W. Tyler, is located on the premises of Colorado Ice and Fuel Co., so it can utilize flue gas from the "wet ice" firm's boilers, and combine two types of "portable refrigeration" according to Tyler.

First completely self-sufficient dry ice plant in Colorado, the Carb-Ice organization is producing 18 tons of dry ice per day which is going into produce and fruit shipping, airline use, ice cream retailing, and dairy production.

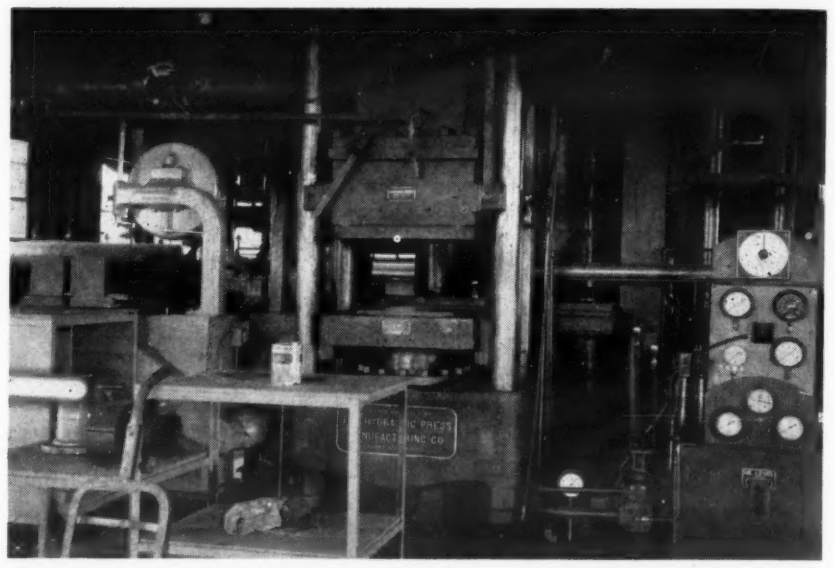
Construction costs for the equipment and building, which started turning out commercial size dry ice in July, ran more than $300,000, to incorporate new refrigeration techniques developed by Lorenzen, who had technical training in Germany before coming to Denver.

The process begins with piping off of boiler gas, containing 9% carbon dioxide, into a spray chamber which washes the flue gas with city water. Cleaned, the gas goes into a towering "absorber" which has 13 trays of monoethylene, a chemical with an affinity for carbon dioxide, which absorbs the entire 9%.

The solution is boiled into a condenser atop the building, and through a potassium pemanganate purifier which removes impurities. A series of heat exchangers remove amine, the result of the mixture, from the solution, which is piped off to a tank for another cycle of $CO_2$ extraction.



**The necessary refrigerating means for the Carb-Ice solid carbon dioxide producing plant in Denver is furnished by these two 4-cylinder, 50-hp. Carrier compressors. The compressors are arranged to operate on from two to eight cylinders, depending upon load requirements.**



**This is the press which squeezes the "dry ice snow" into the blocks which are sold commercially. Plant is said to be the first completely self-sufficient solid $CO_2$ producer in Colorado.**

* * *

From the condenser and purifier, the $CO_2$ passes through a conduit at 7 to 8 pounds p.s.i. pressure into a liquefaction compressor which liquefies the gas at 360 p.s.i. Next it passes through an alumina drier which extracts oil mist and impurities picked up in the compression cycle. There are two driers, which are regenerated on alternate cycles.

All of the refrigeration problems are solved by the use of shell and tube "Freon" units from this point on, powered by two 50-ton reciprocating Carrier compressors engineered by Howard Mitchell of the Mitchell-Trautman Carrier dealership in Denver.

Depending on the load on production equipment, exterior heat, etc, the Carb-Ice plant can operate economically on any multiple of two cylinders, using 2, 4, 6, or 8 cylinders of the Carrier units.

The high pressure tanks between steps are equipped with interior thermostats registering accurately split degrees. Each coil for refrigerating the high pressure, liquefied $CO_2$ may operate on and off several times in a five-minute period, so sensitive is the thermostat used.

From the drier (alumina) the liquid $CO_2$ passes into the main cooler, where a shell and tube "Freon" coil pulls it down to 10° F. Next, it moves by gravity into a Drayer-Hanson shell and tube cooler which further cools it to 0° F.

For precautionary measures there is still another cooling unit, mounted below, which acts as a sub-cooler to hold the temperature at 0° F. before the liquid is fed into a large storage tank.

From the storage cooler tank, the liquid sprays into a flash expansion cooler, where a sudden release of pressure in a large chamber chills it down to -40° F., and results in 400 lbs. of "dry ice snow" in the hollow chamber of a 300-ton pressure press.

The press, squeezing down the "snow," produces a 230-lb. commercial dry ice block at each operation, immediately following the flash process.

Because much gas and liquid is lost during the flash chilling, a miniature condenser, compressor, and flash chamber are built into the system, taking off the high pressure top gas, compressing it again, drying it, chilling it, and flashing it into snow deposited again into the press. A small "Freon" compressor handles this supplemental job, which goes on automatically.

Both of the Carrier condensing units are water-cooled and due to the fact that most of the equipment operates out in the open (the building is merely a shell around the equipment) heat load is kept to a minimum.

# Question: How Does One Determine Cooling Load In High-Ceiling Places?

Do you have any questions or problems in air conditioning application which need an authoritative answer? If so, write to AIR CONDITIONING & REFRIGERATION NEWS, and James J. LaSalvia, veteran air conditioning engineer and author of the "Key to Air Conditioning" series now appearing in the NEWS, will do his best to supply an answer.

Mr. LaSalvia will be pleased to discuss problems readers may have concerning the application of air conditioning.

Southern Technical Institute
Dallas, Texas

Editor:

The question has come up as to what is the best way to determine the cooling load in a space with very high ceiling such as a theater, church, etc.

Even though the temperature in the zone of occupancy is to be held at 80°, the temperature near the ceiling could be and probably would be at a somewhat higher temperature.

Providing side wall outlets are used at a level not higher than 10 or 12 ft. from the floor, is it possible to use a somewhat lower than normal design temperature difference between inside and outside design conditions when calculating the conduction load through walls above the occupancy level, and the conduction load through the ceiling, or should the entire load be calculated on the basis of normal design temperature difference in all parts of the building?

SIG ROSENBAUM

## *Answer: You Can Calculate Separate Heat Gain for Areas Above and Below Outlets*

*Answer:* Your letter with the problem of what is the best way to determine the cooling load for spaces with very high ceilings and with side wall supplies, is a good one, but not a hard one if proper procedure is carried out with the installation. With extreme caution this type of job can be installed to operate as well as any conventional system.

To explain it properly let's assume certain points which must be considered in contrast with the conventional system.

### ASSUMPTIONS

(a) Let us assume any space with a very high ceiling to be air conditioned. The location of the supply grilles is at the side walls 10 ft. above the floor. The ceiling height is 30 ft. The lights are suspended from the ceiling 15 ft. above the floor. The recirculation grilles are near the floor.

(b) Inside conditions are 80° F. d.b. and 50% r.h. Outside conditions are 95° F. d.b. and 75° F. w.b.

### RECOMMENDATIONS

1. Calculate two separate heat gains, calling them "A" and "B." They should be figured in accordance with regular conventional method with no exceptions.

2. Calculate the heat gain "A" up to a point 10 ft. above the highest supply grille. In this case it is 20 ft. above the floor and includes the lights. Let's assume the ventilation for this portion has been calculated as 2,000 c.f.m.

3. Calculate the heat gain "B" for the space above the 20-ft. level. This should include only the sensible heat from walls, ceiling, and windows. This heat gain will have to be removed from the space through a separate exhaust system.

If the conditioned air entering the space is 60° F., the inside design condition is 80° F., and the outside d.b. temperature is 95° F., and, of course, the exhaust system draws its air from the conditioned space, then we can allow the 60° F. air to rise to 90° F. before exhausting, allowing the air to be exhausted to rise within 5° of the outside temperature.

Assuming the heat gain "B" for the space above the 20-ft. level is 50,000 B.t.u. per hour, then the amount of air to be exhausted from the upper space can be calculated as follows:

$$\frac{\text{50,000 B.t.u./hour}}{1.08 \times (90° - 60°)} = \text{1,540 c.f.m.}$$

30° rise

This 1,540 c.f.m. becomes a part of the outside air taken in by the air conditioning system. In this case the 1,540 c.f.m. is to be added to the ventilation in heat gain "A," which is 2,000 c.f.m. making the total outside air to be taken in by the air conditioning system 3,540 c.f.m.

4. It is also necessary in such cases to provide the exhaust grilles above the 20-ft. level in the ceiling proper, or at the side walls near ceiling, so that the air can be exhausted from this upper level as uniformly as possible.

5. In such systems where the lights are at the 20-ft. level or above, the lights must be figured in the exhaust heat gain "B," and eliminated from heat gain "A."

### CONCLUSIONS

Such systems can be provided in spaces of very high ceilings such as banks, churches, but only with supply grilles in side walls. Theaters and other spaces where the ceiling is used for supplying, this type of system does not apply.

In all such cases the heat gain "A" should be calculated up to 10 ft. above the highest supply grille, no matter how high the ceiling. The portion above this point should be figured in the exhaust heat gain "B."

The recirculation grilles on this type of system must be near the floor.

This type of job will cut down somewhat the size of compressor, from what it would be if the air was supplied at ceiling, and figured in the conventional manner. But it will materially reduce the size of supply and return ducts, fan, grilles, etc. for the air conditioning system as the conditioned air to be supplied will be calculated with the heat gain "A," which will have a smaller internal heat gain by not considering heat gain "B."

But to offset this, an exhaust system consisting of fan, duct, and grilles must be installed above ceiling. The cost of such a system over the conventional type would be about the same.

When the compressor and the air conditioning unit are to be installed above the ceiling, it would be best to provide ceiling outlets to cut down on ductwork and provide a conventional system.

JAMES J. LASALVIA

# Idea File Kept In Orderly Fashion Can Be Boon to Small Retailer

LITTLE ROCK, Ark.— One of the least costly and most useful assets the modern retailer can develop is an "idea file" from which to build up merchandising programs, meet excessive costs, buyer resistance, etc.

An "idea file" may be a file drawer, a manila folder, or an envelope from which the retailer can cull good, workable merchandising ideas applicable to his own business. Simple ideas often mean the difference between "an average year" and an extremely profitable one. Thus an idea file which takes a few minutes per day to build up should be at every retailer's fingertips.

A prominent Little Rock, Ark. linens retailer has built an idea file which is religiously maintained merely from clipping newspapers, trade magazines, consumer magazine advertising, and news magazine comments.

At the end of every day, he goes through all reading material in the store. Every idea he finds—whether it be a way to clean a fountain pen or to cut down on lighting expense—goes into the file. In this case the file is an accordion-type 8 x 10 in. expansion folder, alphabetically indexed.

Each alphabetical section covers a different part of retail store operation—window display ideas, floor cleaning displays, discount sales stunts, direct-mail information, how to plan a sales letter, customer approach, "color engineering."

Any idea which has proven successful in time-payment operations, training of salespeople, or loss-leader promotion is sure to wind up in the proper section.

Wherever possible, the retailer marks at the bottom of each clipping the paper from which it was clipped, so that extra copies may be ordered if needed.

Though many ideas do not fit every business, one glove retailer hit upon the idea of selling a glove-cleaning fluid with every pair of gloves when he noticed a clipping which described how an electrical appliance retailer had sold 2,000 cans of lubricating oil with electric fans and vacuum cleaners.

Contests, window display ideas, methods of getting publicity, ways of obtaining testimonials from satisfied customers, all may start a trend of thought which will result in a workable idea.

Maybe it will take several weeks before enough ideas are on hand to solve a problem in the store. Eventually, however, the "idea file" is better than trying to store away all such ideas in the cranium.

Even better than the "idea file" is a "swipe file" which may be filled up with copies of competitor's advertising ideas, promotion schemes, and price lists.


Hub of activity in this section of the Shenandoah Valley is the Mutual Cold Storage Cooperative, Inc.

* * *

# String of Refrigerated Warehouses Provides 'Community Centers' for Virginia Towns

BROADWAY, Va.—Within the last few years, four large cooperatives have sprung up between the picturesque little towns of Broadway and Timberville in the Shenandoah Valley.

They are the Mutual Cold Storage Cooperative, Inc., the Rockingham Poultry Marketing Cooperative, the Zigler Canning Cooperative, and the Shenvalley Meat Packers Cooperative.

The first of these, which in a sense made the others possible, was the Mutual Cold Storage Cooperative. Originally a small ice and cold storage enterprise started in 1916, the plant today performs the services of an important community refrigeration center.

Refrigerating equipment in the original plant was driven by water power from a tributary of the Shenandoah River. The plant stands on a bluff about 30 ft. above the level of the stream.

By 1938, the plant included a storage building six floors high, a locker room, and a quick freezer, together with meat cutting and reception rooms for the locker users. With the opening of the new building, the storage of apples became the most important part of the business.

It was in that year (1938) that the plant was acquired by the cooperative, and further expansion of its facilities begun.

Since then, the old ice-making tank operated by water power has been closed down in favor of a new 50-ton Frick ice tank. This uses whole-row lift, has a brine race, and makes extremely clear ice with the F-P System, according to Terry Mitchell, of the Frick Co.

Two thousand tons of the ice are reportedly stored for summer needs. Several hundred railway cars are iced each year for the Fruit Growers Express Co., in addition to large numbers of trailer trucks, it is said.

Ice is sold to nearby towns, and three country routes are supplied. Ice is also furnished to the poultry plant nearby.

The new ice plant adjoins the engine room. Both of these extend at right angles to the storage buildings, in front of which is a large paved area where scores of automobiles are parked.

With its extension, the machine room now houses 10 Frick ammonia compressors: four 10 by 10's two 11½ by 8 boosters, a 13¼ by 9 booster, a 9 by 9, an 8 by 8, and a 6 by 6. These discharge into a battery of five large Frick condensers of the vertical shell-and-tube type, supplied with water from the river.

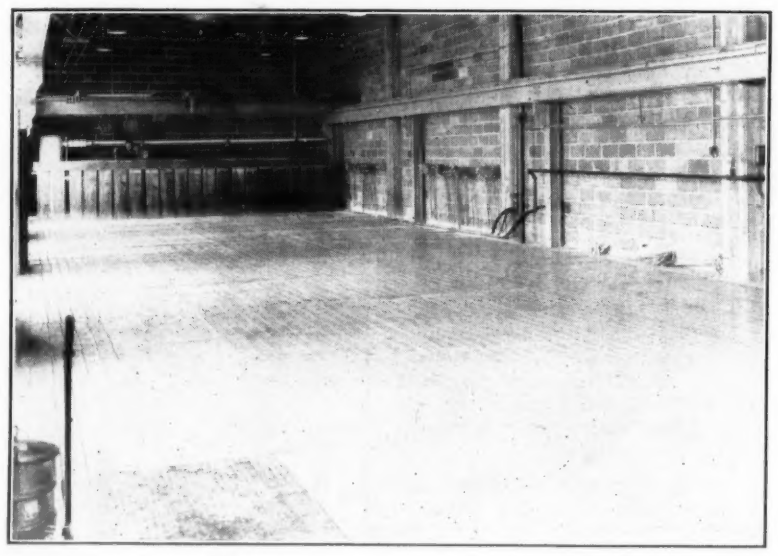
The first Frick compressor was installed in 1929.

The Rockingham Poultry Marketing Cooperative was built on the opposite side of the parking area in 1940. This plant has the capacity to handle 50,000 pounds of chickens a day.

Poultry is first cooled in concrete vats supplied with crushed ice and is then temporarily held in a room kept at 36°. Pipe lines running to the engine room of the Mutual plant

*(Concluded on next page)*

## 50-Ton Ice Making System



A new Frick ice making system has replaced worn-out machinery at the Mutual Co-op.

# Farmers Freeze or Store Large Quantities Of Meat, Apples, Poultry In Warehouses

*(Concluded from preceding page)*

refrigerate this pre-cooling room. A subway 128 ft. long extends under the parking area and connects the poultry cooperative with the quick-freezing tunnel of the cold storage cooperative.

Difficulty having been experienced with freezing of the ground beneath the floor of the tunnel in the basement, a new freezer tunnel is now being constructed on the third floor.

Poultry is packed either in cartons or crates, which are loaded on trucks with shelves of galvanized steel wire. Depending on the size of the boxes, the poultry is kept in the freezer either 12 or 24 hours.

The quick freezing capacity is 4 tons an hour. Temperatures in the freezer reach a maximum low of -45°. The freezer storages hold 1½ million pounds.

A quarter of a mile to the East is the Zigler Canning Cooperative, for which large quantities of apples are stored at the Mutual plant. This enables the canning cooperative to process its fruits on almost a year-round schedule.

Total apple storage capacity of the Mutual plant is now 375,000 bushels. Mutual also manufactures barrels in which apples and poultry are shipped.

When apples are not in storage, the rooms are used for other purposes. The government has stored as many as 280 carloads of potatoes here. Last year, 2,000,000 pounds of peanuts were kept at 32° for many months to accommodate a cannery in Suffolk, Va.

The Shenvalley Meat Packers Cooperative is completing a plant—said to cost between $1,000,000 and $1,500,000—in sight of the Mutual plant and served by the same branch of the Southern Railroad. This packing house will use ice and the freezing facilities of the Mutual plant.

The office building of the Mutual cooperative was built last year. Among its features are air conditioning, walnut paneling, ceilings of acoustic Celotex, venetian blinds, modern lighting, and solid walnut furniture with leather upholstering.

Officers of the cooperative, which include 60 orchardists, farmers, cattle raisers, and others, are H. S. Zigler, president; Dr. C. C. Wright, vice president; and L. C. Huffman, secretary-treasurer and manager.

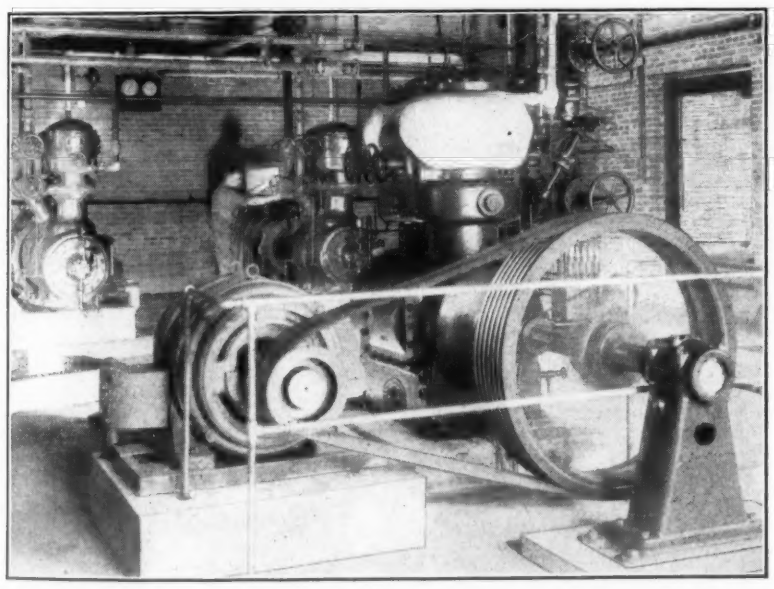
## Staff for Mutual Co-op Operates from Air Cooled Building

(Above) The air conditioned office building for recently-built headquarters for the Mutual Cooperative.

(Right) L. C. Huffman, secretary, treasurer, and manager of the Mutual Cooperative, confers with one of his staff members.

## Goods Piled High In Frozen Storage

The food stocks shown above are part of approximately 1,500,000 lbs. of frozen foods being stored in Broadway-Timberville section of Virginia.



Part of the power source for the cold-making Mutual plant is this 13 x 9 booster and the two other Frick machines. There are seven more compressors included in the Mutual layout.

## Data Given on Readying Metals for Painting

AMBLER, Pa. — A pamphlet on "How to Prepare Metal Surfaces Correctly for Painting" is available from American Chemical Paint Co.

The four-page folder contains an article explaining "what to do and how to do it correctly when preparing metals for painting." The back page is devoted to an index of the company's surface treating chemicals.

## Fred Kramer Co. Takes New & Larger Quarters

CHICAGO—Moving to larger quarters for the fifth time in its 30 years' existence, the Fred C. Kramer Co. now occupies a 27,000-sq. ft. building at 128-138 S. Paulina St. here, the company has announced.

The new location provides ample room for increased stocks and has permitted the company to add a new city pick-up department.

WORLD TRADE NEWS

# Increased Use of Refrigeration Abroad Could Cut Volume, Cost of Food Imports

*Editor's Note:* With some refrigeration groups making representations to the Government for specific allocations of ECA funds for refrigeration equipment, Eugene Hesz, international market analyst, here points out reasons why proper use of such equipment can help foreign countries reduce expenditures for food, transportation, and other related factors.

**By Eugene Hesz, International Market Analyst**

Manufacturers of air conditioning and refrigeration equpiment are confronted today with one of the strange situations which have developed in the international markets as a direct consequence of the last war.

If we investigate and try to analyze the great, outstanding effects of World War II, we find as factor number one the emergence of these United States and Russia as the two most potent political powers, with the Britsh Empire trailing in third place.

But the second factor, perhaps even more significant and directly affecting our very lives, and especially the economic future of this country, is the economic dislocation caused by the history of the last 10 years, to be correct, actually by the history of the last 34 years. We are actually today suffering under the impact upon world economy of both World Wars and the inter-war period.

This economic revolution has put an end to the free interchange of merchandise between the great producing and consuming nations of the world. It has also put an end, as we hope, only temporarily, to the free movement of international currencies, the essential tool of all real reciprocal trade.

### CAN'T HAVE NEEDED EQUIPMENT

Thus we are confronted with the fact that machinery, manufactured by the United States and urgently needed by the up-coming nations which are not yet able to manufacture their own equipment, cannot be exported to those points where it could help not only to improve the standard of living, but where it would actually save hundreds of thousands from starvation.

Here we come to a question of importance, when viewing the possible export of predominantly commercial air conditioning and refrigeration equipment to other countries: why are we exporting the products of our industry?

This country is prepared to export such equipment for three distinct but logical reasons. In the first place our markets have been established and our customers in foreign countries have the right to expect a constant flow of replacement parts, of necessary service, and of a further development of the art and knowledge of application of air conditioning and refrigeration.

We may call this first factor a sentimental argument. But its strength should not be underestimated, as the friend in a foreign country, perhaps with a hot and humid climate, will appreciate American help in the preservation of his food at least as much or perhaps even more, than friendly advice from our economic envoys.

The second factor, closely related to the sentimental aspect of this economic policy, may be called the political angle. It will be shown in a number of examples that some of the great countries in the world, mainly in Asia and the other Americas which are suffering from undernourishment or even from starvation are not so much in need of greater food production than modern methods of transportation and food preservation.

### THE NUMBER ONE PROBLEM

The refrigeration industry is combatting the "number one" problem in the world today, which is continuous daily flow of food to the working man. This problem is not only the leading economic problem, but the "number one" political problem of our time.

In the distribution of foodstuffs preservation is of prime importance and throughout the entire world refrigeration is necessary for preservation of high energy foods. The refrigeration industry must not only be permitted to export their products without restrictions, but must also campaign for greater importations by foreign countries in order to aid in establishing more contented and consequently politically stable communities.

Our third argument in favor of a continued export policy is the argument of every sound businessman who will sell part of his product in markets close at hand and part in the foreign field, thus assuring a better balance for his production. Still more important is the fact that the United States is actually in continuous need of a large number of consumer goods—coffee, tea, pepper, waxes, vegetable oils, etc.—and still more so of raw materials for our own production which could not proceed without them.

Of course, at this moment the United States is in the extraordinarily lucky position that practically all its imports can be paid for in cash. Our imports are by far smaller than our exports and a great part of the gold of the entire world is held by this country and helps to make the dollar the most desired currency.

When world trade returns somewhat to normalcy, this picture is bound to change. Only by paying for imports with exports can a sound world trade be developed and it is in the interest of the United States to make its contribution to the return of normal conditions.

Is it true that air conditioning and refrigeration equipment is an essential instrument for the life of foreign countries which are today enjoying, on the average, a lower standard of living than this country?

A few months ago we had the visit of the Labor Commissioner of the Province of Travancore, situated in the young Indian Republic. He emphasized in a discussion regarding the recurring famines in his home country, the urgent need for three basic improvements: first, more roads; secondly more trucks, and in the third place equipment to preserve the excellent food produced sometimes only 100 miles away from a region showing actual starvation. This government agent doubted the necessity of imports of food into his home country, excepting certain staples like rice, if only transportation and preservation could be improved upon.

### ANOTHER PARADOX

Our good friends in South America, the Venezuelans, give another example of a paradox, directly brought about by the lack of refrigeration equipment. Venezuela is in the happy position of having a very large export surplus. Facts and figures as regards the intrinsic soundness of the economy of Venezuela will be given by this column very shortly. One should think that a country with ample means (dollars) would have no difficulties in the human food problem.

But this is not the case. The extensive plains of Venezuela are well suited for raising cattle, but the lack of transport and the lack of understanding of modern food preservation has blocked a satisfactory growth of these industries. A worse picture is presented by the fishing industry. The country has an abundance of fish in the adjacent oceans. Until a very short time ago almost no fish at all was used for human consumption beyond the ports of entry. Thus, it will be understood that a healthy South American country has imported food on a large scale until this day, an economic paradox and an economic mistake. At last modern refrigeration methods are being introduced.

Many more examples of this kind could be quoted. China is a glaring example for local food abundance accompanied by starvation on a large scale in different regions. Another example in South America is offered by conditions in Brazil. A large part of the population is not progressing to the level of some of its own countymen, in the southern part of the country, a direct consequence of malnutrition in combination with climatic and geological difficulties.

The fight for first place regarding the export or the import of a commodity, when means for payment are scarce and must be rationed, will always be backed by arguments of the outstanding importance of the product under discussion. An approach to a solution of this question should be completely impartial and objective.

Therefore let us look at the import picture of one of the great South American countries, Brazil, and try to come to the answer of the question whether the product of the refrigeration and air conditioning industries has obtained its fair share. In 1947 Brazil has imported raw materials as coal, gasoline, steel, fuel oils, cellulose, lubricating oils, cement, etc. for over 250 million dollars. Foodstuffs have been imported for over 210 million dollars. The importation of manufactured goods has amounted to about 700 million dollars; about 11% of this amount consisted of radio and electrical equipment.

The total amount of American refrigeration and air conditioning appliances and parts shipped to Brazil amounted to only 5.3 million dollars, or in round figures about 0.8% only of all manufactured goods and only ½% of all of Brazil's imports in the year 1947 from all countries. Even if we add another fraction of 1% of such imports for the British quota, we find that an essential industry is marching not in second or third place, but far behind.

The Brazilian picture makes it necessary to give foodstuffs for human consumption first place. There can also be little doubt, that raw materials for the local industries should have a preferential rating. However, there can be no doubt that a typical country with a developing industry, with an only partially built up transportation system and the lack of refined industries should accord a logical preference to: means of transportation—chemicals and medicines—and modern machinery and appliances for the preservation of food, that is refrigeration equipment.

The actual statistics of the government of Brazil provide interesting sidelights to prove this very point. Whereas the total imports of air conditioning and refrigeration equipment from this country amounted to only 5.3 million dollars, the country imported over 8 million dollars worth alone of codfish in 1947. Is it possible to give a better demonstration for a more logical allocation of foreign exchange?

The year 1948 has shown a further deterioration of the dollar situation in many of our export countries. Whereas the percentage of fallen exchange available abroad in 1947 and applied for refrigeration equipment was mostly the outcome of demand vs. supply, this year 1948 has in many countries brought stiff regulation and restriction of imports. In many countries rigid preferences for all kinds of commodities to be imported are being established. Where such policies are being created, the interest of the American supplier and of the international consumer of our industry's product should be safeguarded.

## Paraguay Cuts Import Duties

WASHINGTON, D. C. — Import duties on machinery for ice making and refrigeration have been reduced 50% by the Paraguay Government, the U. S. Embassy at Asuncion reported.

# Tube-Bending Contest, Floor Show Will Highlight Hoosier RSES Meeting Oct. 8-10

INDIANAPOLIS—Five educational talks, a tube-bending contest, cocktail party, banquet, floor show, and dance are the major features of the first annual meeting of the Hoosier State Association of the Refrigeration Service Engineers Society, to be held Friday, Saturday, and Sunday, Oct. 8, 9, and 10, at the Antlers hotel.

The convention will open Friday evening with early registration and an informal get-together followed by a discussion of heat pumps given by Orrin J. Greenwood, chief of research and development for General Engineering & Mfg. Co.

Saturday morning's session will be called to order at 9:30 by President T. Driskell, and following association business, the group will hear a discussion of open self-serve meat cases by a representative of McCray Refrigerator Co.

The noon luncheon will feature an address of welcome by Phillip L. Bayt, Jr., city controller.

After the question-box period beginning at 1:30 Saturday afternoon, a representative of Tecumseh Products Co. will discuss hermetic units.

Next on the program is a tube-bending contest with prizes, which will be conducted by Imperial Brass Co., after which Wm. R. Rinelli of Ansul Chemical Co. will present a discussion and demonstration on wax and moisture and industrial uses of refrigerants for purposes other than refrigeration.

A cocktail party will precede the banquet, scheduled for 6:30 p.m., which will feature the presentation of the charter to the Hoosier State RSES, after which there will be a floor show and dancing.

The Sunday morning session is scheduled for 9 a.m., and after committee reports and election of officers, Early Yockey, International RSES director, will discuss safety.

## Credit Ad Controls--

*(Concluded from Page 1, Column 5)*

"No advertiser shall make any statement about credit terms which is false or misleading or which tends to frustrate Regulation W.

"No advertiser shall use any statement which states or implies that loan or credit terms permitted by Regulation W under special circumstances, or in limited cases only, are available generally.

"No advertisement shall be so constructed typographically or otherwise, as to create the impression that credit terms featured apply to all merchandise, loans, credits, or services offered in the advertisement when such is not the fact.

"When instalment credit terms are advertised as specific amounts per week or pay month, the advertiser shall refer to the fact that a down payment is required, if such be the case.

"No advertiser shall refer to an instalment credit as a charge account.

"No advertiser shall employ the phrase, 'no money down,' or its equivalent, in connection with a charge account."

Copies of the rules are available at ABBB headquarters, 405 Lexington Ave., New York City, or at local bureaus in various cities.

Organizations represented in approval of the voluntary code included the following: National Automobile Dealers Association, National Used Car Dealers Association, American Bankers Association, National Retail Furniture Association, National Association of Credit Jewelers, Retail Credit Institute of America, National Consumer Finance Association, Consumer Bankers Association, American Retail Federation, and the National Retail Dry Goods Association.

## Avery Talks to Detroit ASHVE

DETROIT — Lester T. Avery, a vice president of the American Society of Heating and Ventilating Engineers, will discuss "Process Air Conditioning" before the Detroit chapter of the society at its first meeting of the season to be held at the Rackham Bldg. here Monday, Oct. 11. The meeting starts at 8 p.m.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946

Of Air Conditioning and Refrigeration News published weekly at Detroit, Michigan for October 1, 1948.

State of Michigan }
County of Wayne } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. L. Henderson, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Air Conditioning and Refrigeration News and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, George F. Taubeneck, Grosse Pointe, Michigan.
Editor, George F. Taubeneck, Grosse Pointe, Michigan.
Managing editor, Phil B. Redeker, Detroit, Michigan.
Business manager, E. L. Henderson, Birmingham, Michigan.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)
Business News Publishing Company, 450 W. Fort St., Detroit, Michigan.
Margaret B. Cockrell, 18090 Wildemere, Detroit, Michigan.
Helen C. Henderson, 1273 Stanley Blvd., Birmingham, Michigan.
George F. Taubeneck, 570 University Pl., Grosse Pointe, Michigan.
Phil B. Redeker, 112 W. Euclid, Detroit, Michigan.
Robert M. Price, 8032 Walden, Detroit, Michigan.
C. Dale Mericle, 17154 Westbrook, Detroit, Michigan.
Walter J. Schuler, 5124 Seminole, Detroit, Michigan.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)
None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

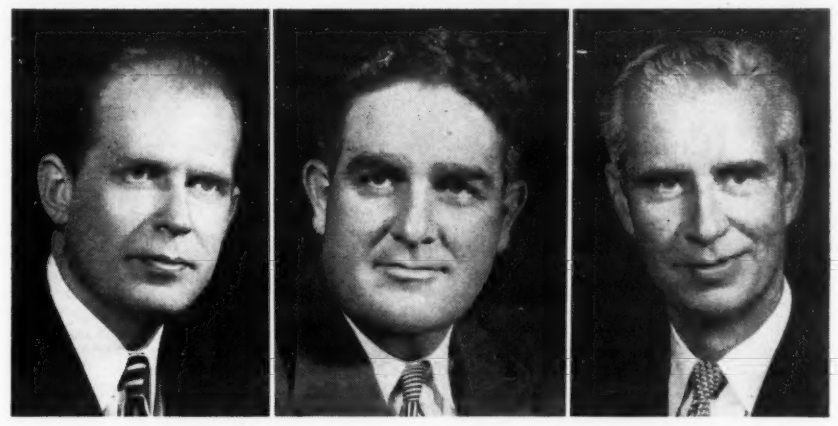
5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is 18,722. (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

Edward L. Henderson
(Business manager)

Sworn to and subscribed before me this 17th day of September, 1948.

[SEAL] Daisy C. Hyell
Notary Public, Wayne County, Michigan.
(My commission expires May 13, 1949.)

## New Sales Managers at Norge



J. E. WYATT, JR. Contract Sales Mgr. | R. C. CONNELL Gas Range Sales Mgr. | M. B. ROBB Home Heater Sales Mgr.

* * *

## Norge Names Wyatt, Robb, Connell In Staff Changes

DETROIT—A number of additions to and changes in the sales staff of the Norge division of Borg-Warner Corp. have been announced.

Included were the appointments of three product managers: R. C. Connell, gas range sales manager; M. B. Robb, home heater sales manager; and J. Edward Wyatt, Jr., contract sales manager.

Connell replaces W. M. Davis, who has resigned. Connell was formerly Norge product sales manager of Ludwig Hommel & Co.

Robb is widely known in the heating field and, among other positions, held that of sales manager of Evans Products Co.

Wyatt was formerly executive vice president of the Dearborn Stove Co.

The field staff has been enlarged with the addition of four district representatives. These are J. M. Dierkes, eastern territory, formerly with Krich-Radisco, Inc., Newark, N. J., Norge distributor; W. E. Laswell, southern territory, formerly regional sales manager, Nashua Mfg. Co.; B. H. Melton, midwest territory, formerly regional sales manager, Presteline division, Pressed Steel Car Co.; and H. J. Hare, western territory, formerly assistant buyer, Bullock's, Inc.

## Reg. W Application--

*(Concluded from Page 1, Column 3)*

of credit actually took place prior to Sept. 20.

On the other hand, the FRB cited the case where a dealer held possession of the appliance that had been set aside as the one involved in the transaction. All other details had been completed before Sept. 20 except the down payment.

The dealer, under his own credit terms, required a down payment before he would go ahead with the deal and make delivery. Here, the FRB said, the extension of credit would not have been made before Sept. 20 and it would be subject to the regulation.

## Free Packaging Material Offer Aids Sale of Large Freezers

PITTSBURGH — To help clinch sales of its 18.5-cu. ft. home freezers, Sears, Roebuck & Co. here is offering $18 worth of packaging material free with each purchase, reports George Wilbar, division head.

And instead of merely handing out the kits, Sears tells each customer exactly how to use the material. Kits include cartons, bags, locker paper, sealing tape, carton filler, and containers.

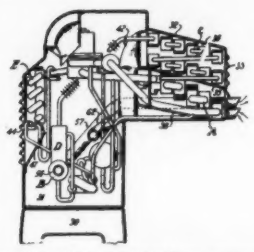
Current price of the 18.5-cu. ft. freezer is $449.50.

# PATENTS

## Week of July 6

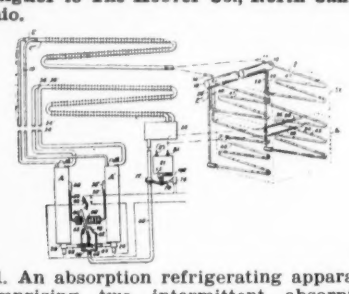
## (Continued)

**2,444,694. ABSORPTION TYPE PORTABLE AIR CONDITIONING UNIT. Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio.**



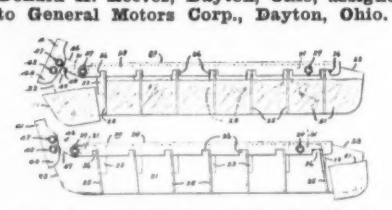
5. Air conditioning apparatus comprising a housing structure including means forming a passageway for air to be conditioned and means forming a passageway for air to and from the exterior of the space to be conditioned; a heat operated air conditioning system associated with said casing including heat transfer parts in each of said air passageways and a part to be heated positioned in said housing outside said air passageways; a combustible fuel burner for heating said heated part; a protective structure sealed from both said air passageways enclosing said fuel burner and arranged to pass products of combustion of said fuel burner in heating relationship with said heated part of said system, said sealed protective structure including means for conducting air from the exterior of the space to be conditioned to said fuel burner and means for discharging waste products of combustion to the exterior of the space to be conditioned in a region having substantially the same air pressure as that prevailing at the inlet to said means for conducting exterior air to said fuel burner.

**2,444,698. TWO-TEMPERATURE INTERMITTENTLY OPERATING REFRIGERATOR. Alfred G. Gross, Wilmette, Ill., assignor to The Hoover Co., North Canton, Ohio.**



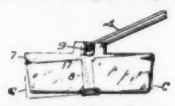
1. An absorption refrigerating apparatus comprising two intermittent absorption refrigerating units each having a generator-absorber and an evaporator, the evaporator of each unit comprising two coiled conduits in open communication with a common source of liquid refrigerant, one of said conduits being in heat exchange relation with a low temperature compartment and the other with a high temperature compartment and arranged for the circulation of liquid refrigerant through each conduit by the evaporation of the liquid refrigerant, and means for throttling the flow of liquid refrigerant through the conduit in heat exchange relation with the high temperature compartment as the temperature of that compartment approaches a predetermined minimum, said means also being constructed to stop completely such flow when the temperature of the high temperature compartment reaches said pre-determined minimum.

**2,444,789. ICE CUBE TRAY AND GRID. Donald H. Reeves, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio.**



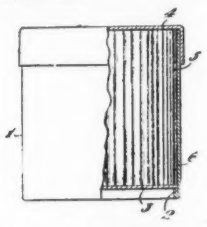
1. A freezing apparatus for liquids comprising in combination, a tray having a grid structure removably disposed therein, said grid structure including a longitudinal wall and a plurality of walls extending transversely to said longitudinal wall in spaced apart relation along the length thereof and dividing the interior of the tray into a plurality of ice block compartments, said transverse walls being movably attached to said grid structure, means for elevating said grid structure together with ice blocks adhering thereto relative to the tray, and means for engaging and applying force to each of said transverse walls to cause movement thereof lengthwise of said longitudinal wall to break the bond between the ice blocks and said grid walls.

**2,444,792. MOLD FOR FREEZING LIQUIDS AND SEMILIQUIDS. Richard M. Storer, Denver, Colo., assignor to General Motors Corp., Dayton, Ohio.**



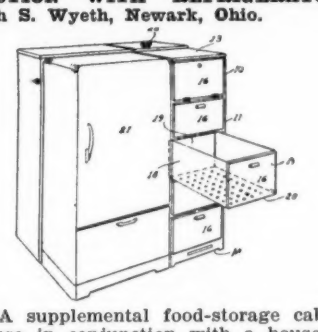
1. In a device of the character described, a mold-element comprising an end-wall member and movable side-wall members, providing a freezing-cell open at one end, and leverage mechanism for effecting a positive tilting movement of the side-wall members independent of the end-wall member, to disrupt their cohesion with ice-blocks in the freezing cell.

**2,444,861. FROZEN-FOOD CONTAINER. Carleton R. Symmes, Saugus, Mass., assignor to H. P. Hood & Sons, Inc., Charlestown, Mass.**



1. A frozen-food container comprising a cylindrical casing having one end margin only turned inwardly to form a ledge, a stiff bottom supported by the ledge throughout substantially the entire circumference thereof and being movable upwardly through the container in response to upward pressure on its under side, and a cylindrical liner resting on the bottom and slidable endwise in the container, the liner having sufficient longitudinal rigidity to be pushed upwardly by said bottom without collapsing, whereby the contents of the container may be ejected from the upper end of the container while still wrapped in the liner by upward pressure on the bottom, the liner being split endwise of the casing throughout its extent so that it may be peeled from the frozen contents after being ejected and having a tab on each edge of the split to facilitate peeling, each tab being confined to a portion of the length of the liner and the two tabs being offset relatively to each other lengthwise of the split, whereby the tabs may extend across the split into overlapping relationship with the margin of the liner on the other side of the split without interfering with each other.

**2,444,887. SUPPLEMENTAL FOOD-STORAGE CABINET FOR USE IN CONJUNCTION WITH REFRIGERATORS. Ralph S. Wyeth, Newark, Ohio.**

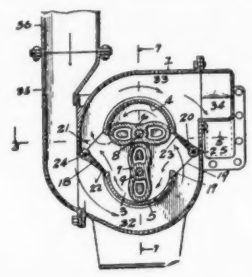


1. A supplemental food-storage cabinet for use in conjunction with a household refrigerator comprising vertical side and rear walls and horizontal top and bottom walls, a plurality of horizontally movable food-receiving drawers slidably mounted in connection with said walls, the bottom of said drawers being formed with perforations provided for the passage therethrough of air circulating within said cabinet, said drawers being provided with unperforated front walls forming the front of said cabinet when the drawers are closed, an inlet for the admission of relative cool air provided in the said cabinet adjacent to the bottom thereof, an outlet for the discharge of air leading from the upper portion of said cabinet, and a second air inlet provided in the lower part of said cabinet and attached for communication with the interior of the associated refrigerator.

### REISSUES

**23,015. REVERSIBLE ROTARY BLOWER. Frank B. Yingling, Hamilton, Ohio. Original No. 2,355,494.**

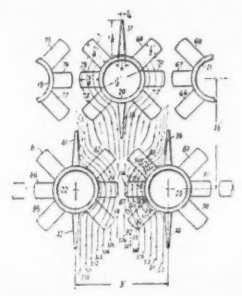
1. In a reversible rotary blower, the combination with an exterior housing and a spaced interior casing forming a constant intake chamber and a constant delivery chamber, said casing comprising two spaced hemispherical concaves having each an intake port and an outlet port at each side of the blower, said ports being located between the interior of the casing and said chambers, and a pair of



reversible rotary interengaging impellers within the casing and operating means therefor, of a valve at one side of the casing controlling an intake port and an outlet port, another valve at the other side of the casing controlling an outlet port, and an intake port, and means for reversing the positions of said valves to reverse the passage of air currents through the casing.

## Week of July 13

**2,444,908. FLUID HEAT EXCHANGE INSTALLATION. Ervin G. Bailey, Easton, Pa., and Ralph M. Hardgrove, Westfield, and Thomas B. Stillman, South Orange, N. J., assignors to The Babcock & Wilcox Co., Rockleigh, N. J., a corporation of New Jersey. Continuation of application Serial No. 471,856, Jan. 9, 1943. This application June 6, 1946, Serial No. 674,786. 6 Claims. (Cl. 257—262.)**



1. A convector including a bank of spaced tubes extending transversely of a flow of an external heat exchange fluid, a primary set of closely adjacent and aligned fin-like extended surface elements secured to each tube in two longitudinal rows at diametrically opposite sides of the tubes with said elements extending generally in the direction of gas flow and having their major transverse axes disposed longitudinally of the tubes, a second set of extended surface elements in the form of studs of thin or flattened cross section secured to opposite sides of the tubes between the opposite rows of elements of the first set, the elements of said second set having their major transverse axes disposed transversely to the wide faces of the elements of the primary set, a third set of oblique extended surface elements constructed and arranged similarly to the elements of the second set, the elements of the third set being longer radially of the tube than the elements of the second set and secured to the downflow quadrants of the tubes between the first and second sets of elements, and means for effecting a flow of fluid through the tubes.

*(To Be Continued)*

# CLASSIFIED ADVERTISING

**RATES for "Positions Wanted" $2.50 per insertion 50 words or under. 5¢ ea. additional word.**

**RATES for all other classifications $5.00 per insertion 50 words or under. 10¢ ea. additional word.**

**ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.**

### POSITIONS WANTED

SELECTED GROUP of men, graduates of well-known trade school, desire employment in refrigeration field. Will travel anywhere. Qualified in domestic and commercial refrigeration. Reliable. Placement Dept., EASTERN TECHNICAL SCHOOL, 888 Purchase Street, New Bedford, Mass.

YOUNG (22) MAN, graduate of two-year technical school of refrigeration and air conditioning desires position in estimation or work leading to estimation. Can take on-the-job-training and will travel. Will consider all propositions. Write BOX 553, 40 W. Long St., Columbus, Ohio.

MANAGER OR sales manager—for a distributing organization. Twenty years associated with electrical appliance industry. Ten years in executive capacities. Complete knowledge of dealer relationships and requirements. Can build and train for outstanding sales performance at wholesale and retail levels. Your share of industry business against low cost operation guaranteed in a buyer's market. Southern or middle states preferred. BOX 2958, Air Conditioning & Refrigeration News.

GENERAL OR sales manager—Commercial refrigeration—beer equipment—store fixtures. I am now employed as general manager of one of the leading sales organizations in the east with a retail volume of over one million dollars annually in commercial refrigeration, store fixtures and beer equipment. I am well qualified to take complete charge of sales, installations, financing and advertising, and can do all layout necessary for complete supermarkets. My present earnings are $10,000 per year plus bonus, and I will be available in 60 days. My many acquaintances with key personnel in many of the leading manufacturers in the country, can assist you in getting the necessary line to round out a complete sales organization. I am 38 years old, married with two children, and can supply the best references covering the past ten years. Will consider moving to any part of the country. The company I am looking for must have the desire and finances to do a million dollars annually. BOX 2960, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE —salesman now employed by metropolitan New York air conditioning distributor on commission basis wishes to handle on part time an additional non-competitive line on same basis; can offer telephone, car, and office address at no charge in handling your leads. BOX 2966, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICEMAN small Mich. community desires connection larger city or southern area. Training refrig. institute, 8 yrs. commercial experience, 5 years own shop. Am. 30 yrs. Sober, reliable, thorough. Would go out of country. BOX 2967, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

AIR CONDITIONING engineer—graduate of mechanical enginering between the ages of 35 and 45 with a minimum of five years practical experience who can take full responsibility for estimating, engineering, and over-all supervision on air conditioning applications up to 50 tons. The Advertiser is well established, well financed, and distributes top ranking equipment in the Baltimore area. Give full details in first letter with photograph if possible. Salary will be commensurate with ability. Interview will be given locally. MARYLAND REFRIGERATION CO., INC., 706 N. Howard St., Baltimore 1, Maryland.

COMMERCIAL REFRIGERATION salesmen—full time or part time, for Virginia, West Virginia, Maryland, Delaware and Washington, D. C. to represent distributor of diversified lines to contact the trade. PUBLIC SERVICE COMPANY, 605 W. North Avenue, Baltimore 17, Maryland, phone Lafayette 0011.

SALESMANAGER—SPLENDID opportunity for sales executive experienced with commercial refrigeration, air conditioning, and heating equipment to organize and assume full responsibilities of retail sales department for old established firm in a large west Michigan city. Excellent salary and bonus arrangement. Give full particulars, past experience, age, references, etc. Reply BOX 2952, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER with proven experience in installation of capillary systems for freezers and beverage coolers. Must be able to take charge of refrigeration department of manufacturer of commercial and domestic refrigeration cabinets, located in Philadelphia, Pa. area. Good opportunity for future with a fast growing company. In reply state experience and salary desired. BOX 2956, Air Conditioning & Refrigeration News.

WANTED—SALES executive experienced in selling milk coolers to distributors. We have an outstanding product. Want someone capable of developing national sales program. Our employees are aware of this advertisement. All inquiries held in strict confidence. Write BOX 2957, Air Conditioning & Refrigeration News.

WANTED—THOROUGHLY experienced air conditioning engineer to head design office for newly organized dealer-contractor. Permanent position in large northern Ohio city. Must be capable of handling air conditioning and refrigeration systems of all sizes, and supervise other less-experienced engineers. Write full details of experience in previous positions, age, and remuneration expected. Your reply will be held confidential. BOX 2959, Air Conditioning & Refrigeration News.

NEW YORK City firm seeking experienced air conditioning salesmen having above average qualifications—ideal working conditions. Only nationally known products handled. Compensation—drawing against commission in respect to individual's qualifications. All replies will be held in strict confidence. Our organization is aware of this advertisement. BOX 2962, Air Conditioning & Refrigeration News.

APPLIANCE BUYER—opportunity with large mid-western retail firm. Experience in handling and buying major home appliances essential. Desire individual who has extensive contacts among manufacturers in the industry. State age, experience, salary expected. BOX 2964, Air Conditioning & Refrigeration News.

REGIONAL SALES director with national manufacturer of self contained air conditioning units, condensing units, coils, etc. for mid-Western territory. This is excellent opportunity for capable man interested in a travelling position and who has a proven record in sales, management, application engineering and working with dealers and distributors. In reply give age and full details of background. BOX 2965, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

RECONDITIONED ELECTRIC refrigerators. Immediate delivery. All standard makes. Fully guaranteed. Wholesale only from $49.50 up. Also large stock of "as-is" refrigerators from $20 up. We buy trade-ins. APPLIANCE PRODUCTION CORP., 59 Crosby St., NY 12, NY.

3'6" X 7'2" YORK track doors. 4" cork insulation at $100.00 each. 3'6" X 6'6" York double batton automatic close doors with track heads for 7'2" track, 1½" cork board insulation at $85.00 each. All new in original factory crates. Freight allowed in United States. BIMEL COMPANY, 2600 Colerain Avenue, Cincinnati 14, Ohio.

SEALED UNITS rebuilt and exchanged. Prompt service on Coldspot (sealed & semi-sealed), Chieftain, Gale, Tecumseh, Norge and many others. One year guarantee. Write for price list and shipping instructions. BRIGHTON, 3906 Joy Rd., Detroit 6, Michigan.

1—6x8 Sterling ammonia compressor, A-1 condition, new plate valves and pistons; 1—Westinghouse motor, 20 H. P., 220 volts, 3 phase, 50 amperes per terminal, induction type, R. P. M. 860, for the above compressor; 1—Cutler-Hammer starter for the above motor, No. 9141H-522C, 50-60 cycles, 220 volts, 60 amp., phase 2-3-3W, 30 H.P. (new); 2—6x6 Creamery Package ammonia compressors No. 2915-14, good condition with motors; 2—Cutler-Hammer auto-transformer starters, No. 914H520, code-29508, H.P. 15-20, phase 3, 220 volts, 55 amp., 60 cycles; 2—shell and tube condensers, good condition, new tubes, enclosed drawing. Above ready for immediate delivery F. O. B. Topeka, Kansas. Price $2,500.00. GEORGE HILGER CO., INC., 8444 S. Racine Ave., Chicago 20, Illinois.

IMMEDIATE DELIVERY. 15 & 20 ton, Bell-Gossett shell tubing, "Freon" condenser, ⅝ Wolverine copper tubing, removable heads. $140.00 and $160.00, F. O. B. Chicago. GEORGE HILGER CO., INC., 8444 S. Racine Ave., Chicago.

BRAND NEW ½ H.P. open type Universal condensing units, air cooled condenser, 110 or 220 volts single phase, original crates, complete. Sacrifice price: $70.00 each in lots of five F.O.B. Detroit; $65.00 for the lot of 26. Write, wire, or phone. MECHANICAL HEAT & COLD, INC., 12320 Hamilton Avenue, Detroit, Mich.

FOR SALE ten 3-HP water cooled, "Freon" Copeland machines with 3-HP 3 phase motors $248.00 each. Ten model 495 5-HP Copeland water cooled "Freon" machines equipped with 26 Copeland compressors and 5-HP 3 phase motors $278.00, all F.O.B. Kansas City, Missouri. These machines are brand new in original Copeland crates and carry the one year factory guarantee. 10% deposit required with all orders, balance C.O.D. THE NAT CORPORATION, 2710 McGee, Kansas City, Missouri.

TYPHOON WEATHERMAKERS 5 H.P. $295. Amco weathermakers 1 H.P. $175. Units less motors, ⅓ H.P. Copelands $29; ⅓ H.P. Universals $39; F-300W8-H Mills $205; 50 H.P. Schnacke $895. Motors, Wagner 5 H.P. high torque $89. Household refrigerators "as is." PILGRIM REFRIGERATION CO., 48-20 43rd Avenue, L. I. City 4, N. Y.

ALL STAINLESS steel inside and out Cold Master under bar type beverage coolers with coil, blower, dividers, and racks. Both 5 and 6 foot lengths being sacrificed at $150.00 each less unit FOB Los Angeles plus $10.00 crating. Can supply Jack and Heintz quarters $65.00, thirds $75.00. ROYAL REFRIGERATION CO., 8828 Key St., Los Angeles 35.

SUBJECT TO prior sale: hermetic Chieftain units—¼ H. P., $44.50; ⅓ H. P., $48.50. Other well known hermetics—⅕ H. P. fan cooled, $52.50; ¼ H. P. fan cooled light duty, $57.50; ¼ H. P. fan cooled heavy duty, $59.50; ⅓ H. P. fan cooled, $69.50. Open units, standard makes—¼ H. P., $54.50; ⅓ H. P., $64.50; ½ H. P., $84.50. Above prices quoted on lots of six. All open units are 60 cycle, single phase. All above units new, carrying factory warranty. Write for unit list. Minneapolis-Honeywell, Dual press. control, $4.50; Minneapolis-Honeywell Low press. control, $3.00; White-Rodgers, Low press. control, $3.25; Genuine Frigidaire Low press. control, Y L, $4.25; Detroit Low pressure control, $4.25; G. E. Blower fan motor with 10" fan, 110 v. 606, $4.50; Superior Heat Exchanger, 13" overall, ⅜" x ⅝", $4.75; Mueller Heat Exchanger, 14½" overall, ⅜" x ⅝", $5.00; Mueller Heat Exchanger, 21" overall, ½" x 1⅝", $9.00; Kayson heavy duty cooler locks, 13" overall, with set of hinges, 15" overall, complete with inside push rod and master lock and keys, $9.50; Kramer Trenton ½ ton panel blower compressor, $35.00; Vapor proof refrigerator lights, with guard, $3.00; Filter drier, silica gel, ¼" x 1¼" x 6¼" overall, 10, $6.50; U. S. "Freon" gauge 4½" face, 30" vac., 150# or 300# corresponding temperature scale, red warning hand, $4.50; 5 lb. can Davison refrigeration silica gel, $1.10; Cold plates —1—30" x 55"—2—30" x 64", 3 to a set, $35.00. WALTER W. STARR, 1207 W. George St., Chicago 13, Ill.

REBUILD YOUR own sealed units. Send us your burnt and stuck up heads and they will be immediately replaced from our stock. Send for our complete price list. TECHNICAL REFRIGERATION SPECIALIST'S, 362 East 180th Street, Bronx 57, New York.

### BUSINESS OPPORTUNITIES

WELL ESTABLISHED commercial and household refrigeration sales and service business in western New York in town of 40,000 population. Sales gross $60,000 year. Well equipped shop, good stock, good lease. Owner has other interest. Price, $15,000. BOX 2961, Air Conditioning & Refrigeration News.

FIRMLY ESTABLISHED air conditioning, heating, commercial refrigeration business located in the South. Annual gross $200,000 with net of 20%. Owner will lease or sell building along with sale of business. All equipment including 4 trucks new. Complete facilities and equipment for fabrication of all metal work. New building 6,500 square feet floor space. Very valuable franchises are being held and can be transferred to right party or parties. Owner in ill health is only reason for selling. Amount necessary to handle transaction not including building, $75,000.00. If interested write BOX 2963, Air Conditioning & Refrigeration News.

# Refrigeration Problems

## And Their Solution

***By Paul Reed***

**For Service and Installation Engineers**

Paul Reed

## Absorption-Type Refrigeration (1)

Although absorption refrigeration has only comparatively recently come to the attention of the public because of its application to the household refrigerator, this method of producing refrigeration without a compressor is really quite old and was, in fact, used commercially as early as the compression method.

### COLD ABSORBENT ABSORBS MORE

Absorption refrigeration is made possible by the fact that some gases will be readily *absorbed* into certain liquids *when the liquid is cold* but will be *driven out when the liquid is heated.*

The gas that is absorbed or driven out is called the "refrigerant" for it is the one that directly produces refrigeration. The liquid is called the "absorbent," for its job is to absorb, but later release, the refrigerant.

There are many gases that can be used as refrigerants and many liquids that can be used as absorbents. Some of the gases that can be used as refrigerants can be absorbed by any one of several absorbents, but one of these absorbents does a better job of absorbing that particular refrigerant than the other absorbents.

### AFFINITY OF ABSORBENT AND REFRIGERANT

So there are many pairs of refrigerants and absorbents that are especially well suited to one another. One of these "pairs" is ammonia as the refrigerant and water as the absorbent. Another is methylene chloride (Carrene No. 1) as the refrigerant and dimethoxytetraethylene glycol as the absorbent. In fact this absorbent can be used with a number of refrigerants of the hydrocarbon series.

A liquid may be an absorbent with one gas or liquid refrigerant but may turn around and act as the refrigerant when as a gas, it is mixed with another liquid and it then becomes the absorbent.

For example, water and ammonia; the water is the absorbent and the ammonia is the refrigerant. But with lithium chloride, lithium bromide ethylene glycol (the so-called "permanent" anti-freeze for automobile radiators) or any one of a dozen or more other liquids, the water becomes the refrigerant and the other liquid becomes the "absorbent." There are many other less well known "pairs" of fluids that are refrigerant-absorbent combinations, but by far the most popular of the refrigerant-absorbent pairs is the ammonia-water combination.

### HOW IT WORKS

As an example to illustrate how absorption refrigeration works, let us then take the ammonia-water combination.

The two interconnected vessels shown in Fig. 1, form a simple absorption system. In each of the two vessels is a quantity of "aqua ammonia" or ammonia-water consisting of pure water into which is dissolved or "absorbed" some anhydrous ammonia refrigerant ($NH_3$) in proportions of about 30% by weight ammonia and 70% water.

No refrigeration can be produced as long as the solution is stable, so something must be done to make the concentration greater in one of the vessels than in the other. Thus we put a flame under the right-hand vessel.

### ENERGY COMES FROM THE FLAME

This drives the ammonia out of that vessel and it passes as a gas over to the left-hand vessel, which, being cooler, causes the ammonia gas to be absorbed into the solution there.

* * *

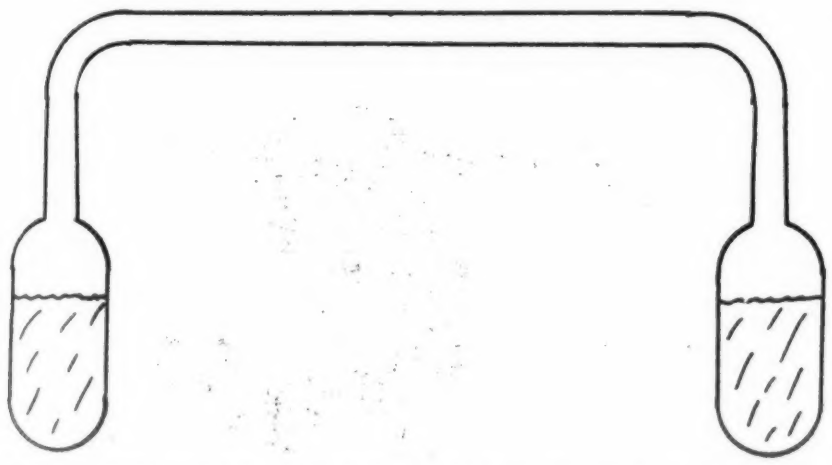


**Fig. 1—These two interconnected vessels form the most simple type of absorption system. In each of the two vessels is a quantity of aqua ammonia. If one of the vessels is heated, the "absorption" refrigeration effect will be started.**

To aid in this absorption process, a stream of cool water is played on the left-hand vessel and this carries away, somewhat faster, the heat brought to the left-hand vessel from the right-hand vessel and also the heat that is produced by the absorption of the ammonia into the water in the left-hand vessel, this heat is called the "Heat of Absorption."

### HEAT CHANGES CONCENTRATION

If this "cooking" of the right-hand vessel is continued for some time, the concentration of ammonia in that vessel will become lower and the concentration in the left-hand vessel will become correspondingly higher.

Finally, after an hour or so, the flame is taken away from the right-hand vessel and the water from the left-hand one. By this time, let us suppose that the concentration of ammonia in the right-hand vessel has dropped to 20% ammonia and 80° water and has correspondingly risen to 40% ammonia and 60% water in the left-hand vessel.

### COOLING IS PRODUCED

There is therefore an excess of the ammonia refrigerant in the left-hand vessel, that can be used to produce refrigeration. Since the concentration in the left vessel is greater than in the right, the ammonia will bubble out of the solution in the left vessel, and pass over and be absorbed in the weaker solution in the right-hand vessel.

Therefore the left-hand vessel will be cooled by the evaporation of the ammonia out of the stronger solution, and the right-hand vessel will be heated by the heat-laden ammonia coming from the other vessel. This heat will be radiated to the air by the right-hand vessel.

Thus the left-hand vessel becomes the evaporator and the right-hand vessel becomes the condenser.

### THE INTERMITTENT CYCLE

This is practically what happens in certain types of small absorption systems used for household refrigerators. Part of the time the equipment is cooling and part of the time it has to be "generated." Thus it operates "intermittently," and this type is known as the "intermittent" cycle type of absorption refrigerator.

*(To Be Continued)*

## Jones & Brown Expands Distributing Staff

PITTSBURGH — Appointment of John A. Palys as assistant advertising and promotion manager for Jones & Brown, Inc. here, has been announced by P. M. Hutchins, manager of advertising and sales promotion for the national distributor firm.

Expansion of the advertising and sales promotional activities of Jones & Brown, Inc., is in line with the company's expanded selling program including national distribution of Inselbric, insulating brick, Ko-Z-Aire conditioning units. and Pittsburgh Interlock Tile, a plastic wall tile.

## Boston Program--

*(Concluded from Page 1, Column 4)*

ice engineers, wholesalers, contractors, and dealers are expected to attend the conference and view the exhibits.

The exhibits will consist of working and cutaway models, sectional drawings, motion pictures, and slide films. Refrigeration experts from all over the country will be available to answer questions.

The complete program follows:

**FRIDAY, OCT. 8**

9 a.m.—Registration—Lobby of Bradford hotel.

2 p.m.—Official Opening of Educational Exhibits.

7 to 9:30 p.m.—Educational Briefs.

10 p.m.—Exhibit Halls Close.

**SATURDAY, OCT. 9**

8:30 a.m.—Registration—Lobby of Bradford hotel.

9 a.m.—"Information Please" Question and Answer Forum.

9:45 a.m.—H. F. Hildreth, President of REMA, Address of Welcome.

10 a.m.—L. W. Larsen, Tecumseh Products Co., "Servicing High Speed Compressors."

11 a.m.—Dr. Walter O. Walker, Ansul Chemical Co., "Driers."

12 Noon—Exhibit Halls Open.

2 p.m.—Clarence Birdseye, "Frozen Foods."

2 to 5:30 p.m.—Educational Briefs.

7 to 9:30 p.m.—Educational Briefs.

10 p.m.—Exhibit Halls Close.

**SUNDAY, OCT. 10**

8:45 a.m.—Registration—Lobby of Bradford hotel.

9 a.m.—"Information Please" Question and Answer Forum.

9:30 a.m.—George Schuld, Sr., Safety Director International RSES, "How to Eliminate Hazards In Refrigeration."

10 a.m.—Exhibit Halls Open.

10 a.m. to 1:30 p.m.—Educational Briefs.

3 p.m.—Exhibit Halls Close.

3 p.m.—RSES-REMA Banquet and Entertainment.

6 p.m.—Adjournment.

## Dept. Store Sales Rise 11% for Sept. 18 Week

WASHINGTON—A rise of 11% in dollar sales for the nation's department stores over the corresponding week last year were reported for the week ended Sept. 18, according to the Federal Reserve Board.

This gain was registered despite the Labor Day holiday, which last year fell in an earlier week.

All Federal Reserve districts, except San Francisco which held the same level as last year, reported gains for the week. The Dallas district led the list with a 31% gain over last year.

## Restrict Water Use--

*(Concluded from Page 1, Column 4)*

size of existing mains was such that pressures in some areas were almost down to zero and that the water flow was not sufficient for fire departments to fight a serious fire.

Only other alternative the commission had was to enlarge the entire system.

One engineer expressed the opinion that similar problems in water consumption and disposal will be faced this year in many eastern cities and that codes restricting the use of water in air conditioning and refrigeration systems will be adopted.

He also believed that other major appliances, such as automatic washers, dishwashers, and garbage disposers, contribute to the problem.

Text of the resolution adopted by the Washington Suburban Sanitary Commission follows:

WHEREAS—

the increased use of water cooled air-conditioning equipment, refrigeration machinery and compressors has involved the consumption of water in an amount not anticipated, and has put an entirely unlooked-for burden upon the sanitary sewerage system of the Commission,

the Commission feels that in the interest of the public and of its water supply and sewerage systems, it must regulate the installation of water cooled air-conditioning equipment, refrigeration machinery and compressors.

NOW, THEREFORE, BE IT RESOLVED—

That, in compliance with Section 10 of Chapter 122, of the Acts of the General Assembly of Maryland of 1918, the following regulation entitled "Water Cooled Air-Conditioning Equipment, Refrigeration Machinery and Compressor Installations" is hereby established and adopted, said regulation to become effective as of September 15th, 1948.

WATER COOLED AIR-CONDITIONING EQUIPMENT, REFRIGERATION MACHINERY AND COMPRESSOR INSTALLATIONS

1. All water cooled air-conditioning equipment, refrigeration machinery and compressor installations using water from the public water supply or discharging water into the public sanitary sewerage system shall be subject to the Commission's inspection and approval.

Such installations shall be free of any possibility of cross connections or back siphonage and the connection of the installations with water and with waste pipes shall be done by a registered plumber.

A written permit will be required for each installation, for which a charge of $3.00 will be made, which charge will include the expense of regular inspection. Extra charges will be made for additional inspections required on account of condemnation of work, or for premature request for inspection.

2. Such installations will not be permitted to take water from the Commission's system at a rate greater than 0.08 gallons per minute per ton of refrigeration and if necessary to accomplish this purpose, an approved type of economizer or cooling tower shall be installed as the plumbing inspector shall require. A ton of refrigeration shall be defined as the amount of heat required to melt ice at the rate of 1 ton in 24 hours.

3. Water from any such installations, whether or not water is taken from the public water supply system, shall not be discharged into the Commission's sanitary sewerage system at a rate in excess of the foregoing.

4. All water cooled air-conditioning equipment, refrigeration machinery and compressor installations using water from, or discharging water into, the Commission's system, whether or not installed prior to the adoption of this section, where required, shall be modified to bring them into conformance with the provisions of these regulations not later than May 1, 1949.

5. Properties in which water cooled air-conditioning equipment, refrigeration machinery and compressor installations are made contrary to the provisions of this section and are not promptly modified as directed, or installations made prior to the adoption of the section and not modified by May 1, 1949, will be disconnected from the Commission's systems until the requirements of this section are complied with.

## Heads New Department

E. C. HAMILTON

* * *

## E.C. Hamilton Will Manage Worthington Operation

HOLYOKE, Mass. — Worthington Pump and Machinery Corp.'s Air Conditioning and Refrigeration Distributor Service Department has been combined with the Air Conditioning and Refrigeration Sales Division, and the new department will be under the direction of E. C. Hamilton as manager, with headquarters at Holyoke.

Among the products affected are packaged air conditioners; "Freon" condensing units and compressors (reciprocating); evaporative condensers; fan and coil assemblies (air conditioning and refrigeration service); ammonia boosters (Series HA); combined ammonia units; vertical ammonia compressors (3 x 3 to 10 x 10 inclusive); shell-and-tube coolers and condensers sold in combination with the above.

Hamilton has been associated with the Holyoke works since 1938, and in 1943 was made manager of the Air Conditioning and Refrigeration Service Department. He is a member of the Refrigeration Service Engineers Society, and the American Society of Refrigeration Engineers.

## August Ice Cream Sales 17% Below Last Year

NEW YORK CITY — Ice cream production during August dropped 17% below the same month last year, dairy officials here reported recently. This loss is considered to be serious for August is an important month in ice cream production.

Diversion of cream that would normally have gone into ice cream to the manufacture of butter is said to have contributed to lower prices for that commodity.

## CY Electric To Sell, Service Appliances In Casper, Wyo.

CASPER, Wyo. — Robert Wallin has opened the CY Electric Co. at 714 CY Ave. to deal in refrigerators, home freezers, and other appliances as well as operating a complete service department.